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Commonwealth Edison Company ("ComEd" or the "Company") is submitting this report to the Illinois Commerce Commission (the "Commission") in accordance with Section 16-125 of the Public Utilities Act (the "Act") (220 ILCS 5/16-125) and the Commission's transmission and distribution reliability rules (the "Reliability Rules"), which are set forth in Title 83 of the Illinois Administrative Code (83 Illinois Administrative Code Part 411).

INTRODUCTION

ComEd is strongly committed to providing reliable transmission and distribution service to all of our customers. We serve over 3.4 million customers, representing approximately 8 million people, or approximately 70% of the state's population. Our service territory encompasses 398 municipalities in the northern one-fifth of Illinois, including the City of Chicago. Our transmission and distribution system contains more than 1.5 million poles and towers, 500,000 transformers, 140,000 miles of electrical conductors, and 740 substations.

In 1998, we reaffirmed our commitment to reliability in a new strategic plan called *Unicom Directions*. This plan identifies reliability as ComEd's first objective, providing that we "improve the efficiency, dependability and quality of our delivery service."

We are reinforcing the importance of this objective in our transmission and distribution employees, establishing three indicators of good performance – reliability, customer satisfaction, and the execution of our transmission and distribution work plan. We view these indicators as interrelated, because if our work plan is properly executed in a timely manner, then our reliability will be maintained and ultimately enhanced, and our customers, in turn, will more likely be satisfied.

Events during 1998 underscored the importance of our renewed commitment to reliability. ComEd's transmission system performed particularly well. The distribution system, while generally sound, faced a number of special challenges. Our service territory experienced several more major storms than usual. Two of the storms in 1998 were especially severe – an unprecedented ice storm in March, and an extreme windstorm with hurricane-force winds in November.

The storms of 1998 burdened our customers, our employees, and our system as a whole. Our customers experienced on average 2.20 interruptions, with an average duration of 274 minutes.

Storm-related interruptions were particularly difficult for small pockets of customers who had been experiencing higher than normal numbers of interruptions during non-storm periods. Officials from municipalities sought and were given both explanations of these situations and solutions from ComEd.

These challenges to our distribution system had effects on customer satisfaction, and our customer satisfaction levels dipped to an all-time low during the third quarter of 1998, but began to recover in the fourth quarter.

The special challenges that we faced during 1998 confirmed the correctness and priority of the *Unicom Directions* objective to improve the performance of our delivery service. The renewed commitment to reliability focused on a number of key fronts:

- increased investment in reliability improvement projects;
- a comprehensive work plan to implement those projects;
- enhancements in our capability for restoring service after interruptions; and
- improvements in communications with the communities and customers we serve.

Increased Investment in Reliability Improvements

We substantially increased our commitment to projects for improving reliability. In mid-1998, we added more than $6 million to our nearly $35 million annual budget for tree trimming. Given that tree contact, wildlife, and fallen trees and branches are leading causes of interruptions, this addition was an important contribution to our mid-year efforts to improve reliability.

In October, we announced a host of new efforts for reinforcing our transmission and distribution system. In conjunction with these efforts, we expanded our 1999-2001 capital budget for the system by $307 million, thereby raising our three-year capital budget to approximately $1.4 billion. We also added $30 million to our 1999-2001 operating and maintenance budget for the system, raising the three-year operating and maintenance budget to approximately $840 million.

Some of our plans for using these new funds in the capital budget include:

- $26.5 million to automate our 34,000-volt sub-transmission system, which will help us more rapidly restore service to customers who have been interrupted;
- $22 million to complete our project to computerize all of our distribution system maps, which, among other things, will allow us to better analyze where to send crews during storms;
- an additional $126 million (beyond the originally budgeted $296 million) for infrastructure replacement to replace cables, wires, transformers, circuit breakers, and other pieces of equipment on the transmission and distribution systems and provide additional reliability enhancements including:
- $30 million for programs to improve the reliability of service to individual customers or groups of customers who have experienced more than the average number of interruptions;
- $32.5 million for targeted programs aimed at our system as a whole (for example, a program to improve the circuits experiencing the most interruptions).

The additional operating and maintenance funds are focused on tree trimming. We added $30 million (to the originally budgeted $104 million) for tree trimming in 1999-2001. These expenditures should reduce the number of tree-related interruptions.

Detailed discussions of our plans are found below in Section A of Part I of this report.

Comprehensive Work Plan

To assure that our resources are being used effectively, we have adopted a new comprehensive work plan. This plan entails both identification and implementation of projects.

Identification of Projects: To decide which projects to undertake to maintain or improve reliability, we analyze information from a number of sources, including field crew observations, repair records, interruption records, and operational histories of equipment. Engineers then combine this information with information received from customers and create individual projects to improve reliability for individual customers or neighborhoods, or for the overall system.

Implementation of Projects: Once we have identified a project, we define its scope, schedule, and budget. We also identify labor and equipment needed for the project, and assign an individual project manager, who is accountable for the proper and timely execution of the work. In addition, we coordinate the overall schedule of projects, in an effort to standardize our management methods. Our managers oversee the entire work plan, and we regularly monitor budgets and work completed.

Enhanced Restoration of Service

We have improved our ability to restore service after interruptions. One key to this improvement has been the centralization of our restoration efforts in our new, state-of-the-art Distribution Dispatch Center in Joliet, which became fully operational in March 1998. Another key has been the establishment of our Storm Command Center. This center, which is located within the Distribution Dispatch Center, serves as our headquarters for large storm restoration efforts. The functions of the Storm Command Center include coordinating internal and external communications and helping effectuate restoration of service.

In addition to establishing our Storm Command Center, we have revised and developed new and comprehensive procedures for responding to storms. We continuously monitor weather forecasts at the Distribution Dispatch Center, and when it appears that a storm will affect our service territory, we begin taking appropriate measures to prepare for restoration of service and an increase in the number of customer calls.

We have more than 500 ComEd crews to work on restoration, and if our own crews are not sufficient, we have contracts and agreements to obtain additional support from independent contractors and other utilities. We also keep our workforce of Customer Service Representatives at full strength to address increased call volume from customers, and supplement our work force with contractor Customer Service Representatives, if necessary. In addition, we have an automated storm voice response unit, which allows customers to report interruptions and to call back to get a status on when service will be restored.

During our restoration efforts, we provide regular updates to the media, municipalities, and the Commission, and we have developed a proprietary web page that provides regional outage information for municipal use. All of this information can be used to help coordinate restoration efforts and to help keep our customers informed of restoration progress.

Additional efforts to enhance restoration include:

- purchase of 700 new cellular phones for our storm restoration personnel to supplement radio communications during outages;
- introduction of a process of contacting interrupted customers after storms to be sure that their service has been satisfactorily restored;
- installation of an automatic vehicle locating system on our construction fleet to allow us to track the location and movement of our crews, and thus to help ensure effective deployment of the crews throughout the area;
- improvements in our telephone system so that we can handle up to 50% more call volume;
- establishment of a special toll-free number to update fire and police departments on crew response; and
- training of additional ComEd personnel to respond to “wires down” calls and to act as “wire watchers” until our crews arrive, thereby freeing up fire and police department personnel to respond to other emergencies.

Improved Communication

In addition to working to maintain and improve the transmission and distribution system, we have worked to better our communications about the system and our operations. For example, we have enhanced our annual status reports to municipalities to make them more understandable and useful. In addition, we have continued to meet with municipal leadership.

Over the past several months, our chairman and other members of our senior management team have met with municipal organizations to discuss reliability issues. These meetings have helped ComEd identify specific concerns and develop responsive action plans to improve reliability (e.g., tree trimming, lightning protection, cable replacement) and overall customer satisfaction.

We have used bill inserts, separate mailings, and local media to advise individual customers of electrical system improvement work taking place in their communities. We also have used special information packets for tree trimming. In addition, we have worked cooperatively with local authorities to ensure that repair work is minimally disruptive to the public.

All of these actions – increased investment, a comprehensive work plan, enhanced restoration of service, and improved communication – served to address the many challenges we had in 1998, and improve reliability further in 1999 and beyond.

* * * * *

We now turn to the main body of this report. Consistent with the Act and the Commission's Reliability Rules, our discussion will cover several aspects of reliability, including:

- our plan for future investment in our transmission and distribution facilities, which identifies specific programs – such as replacement of poles – to address reliability challenges (Section A of Part I);
- the number and duration of planned and unplanned interruptions, and the impacts of those interruptions on customers (Section C of Part I);
- the number and causes of controllable interruptions (Section D of Part I);
- a qualitative characterization of the condition of our transmission and distribution system (Section G.i of Part I);
- our expenditures for construction and maintenance on our transmission and distribution system for 1998 (Section G.iii-iv of Part I);
- results of customer satisfaction surveys concerning reliability and customer service (Section G.v of Part I);
- statistical reliability indices showing the average number of interruptions experienced by customers and the average duration of customer interruptions (Section H of Part I);
- a listing of the circuits experiencing the most difficulties, and a discussion of our plans for improving performance on those circuits (Sections I and J of Part I); and
- detailed records of every interruption that affected ten or more customers, including the duration of the interruption, the number of customers affected, a description of the cause of the interruption, descriptions of measures taken to restore service, to remedy the cause of the interruption, and to prevent a future interruption, and any remuneration paid to customers or waivers of fixed charges (Section b.1 of Part II and Appendix).

Our discussion of these topics underscores our strong commitment to providing reliable transmission and distribution service. It also allows the Commission and the public not only to understand, but also to evaluate, our provision of that service. We welcome comments on this report, and look forward to continuing to work with the Commission and with the communities and customers we serve to maintain and improve reliability.

PART I: SECTION 411.120

In this Part, we respond to the requirements set forth in Section 411.120(b)(3) of the Commission's Reliability Rules.

Section 411.120 (b)(3)(A): *"A plan for future investment and, where necessary, reliability improvements for the jurisdictional entity's transmission and distribution facilities that will ensure continued reliable delivery of energy to customers and provide the delivery reliability needed for fair and open competition, along with the estimated cost of implementing the plan and any changes to the plan from the previous annual report. i) The plan must cover all operating areas, including a description of the relevant characteristics of each operating area and the age and condition of the jurisdictional entity's equipment and facilities in each operating area. ii) The plan shall cover a period of no less than three years following the year in which the report was filed. iii) The plan shall identify all foreseeable reliability challenges and describe specific projects for addressing each. iv) The plan shall provide a timetable for achievement of the plan's goals. v) The plan shall report and address all unresolved reliability complaints about the jurisdictional entity's system received from other utilities, independent system operators, and alternative retail electric suppliers. vi) The plan shall report the specific actions, if any, the jurisdictional entity is taking to address the concerns raised in such complaints received from other utilities, independent system operators, and alternative retail electric suppliers. vii) The plan must consider all interruption causes listed in Section 411.120(b)(3)(D). viii) The plan must consider the effects on customers and the cost of reducing the number of interruptions reported as required by Section 411.120(b)(3)(C)."*

A. Plan for Future Investment

Our plan for future investment in our transmission and distribution facilities is central to our commitment to reliability. We have designed our plan not only to ensure continued reliable delivery of energy to our customers, but also to help provide the delivery reliability needed for fair and open competition.

Overview

Under our investment plan, we will continue to allocate substantial resources to maintaining and enhancing our system. As a result of an initiative by our chairman, John Rowe, ComEd plans to spend significant dollars in the next five years for long-term improvements in our service and our system. These expenditures, of which over $2 billion already have been identified, cover a wide range, including accelerated tree trimming, repair or replacement of existing facilities, and installation of automated technologies. Our planned investments also include a number of large projects focused on bringing power to developing areas of our service territory.

Our investment plan is designed for our system as a whole. This strategy is appropriate because although the ComEd system has four operating areas as shown on the cover of this report (Chicago, Northeast, Southern, and Northwest), each with its own characteristics (which we discuss more in Section G of this Part), our goals of reliability and customer satisfaction apply system-wide. We invest on a project basis, not by geographic region, and spend the amounts necessary to achieve a consistent level of system-wide reliability.

Consistent with this strategy, we administer our engineering, construction, and maintenance programs across our entire system. Such an approach allows us to evaluate the impacts of our investments on our system and customers overall, and thus to ensure that such investments are cost-effective. This new approach, called "asset management," is being adopted by some of the world's leading companies.

To identify facilities and equipment for investment, we draw upon a number of sources. One key source is the maintenance required for each piece of equipment, as determined by

factors such as the function of the equipment, the historical performance of equipment of the same make or model, and the number of times the piece of equipment has been operated or stressed. This approach, called "reliability centered maintenance," is discussed in detail in Section G of this Part.

We draw upon several other sources, as well. We review field observations of work crews, repair records, and the operational performance of equipment throughout our service territory. We also consider the various causes of interruptions to determine how we can repair or improve equipment to minimize future interruptions. (More detailed discussions of interruption causes are in Sections C, D, and J of this Part and Section b.1 of Part II.) In addition, we evaluate the effects on customers and the costs of reducing the number of interruptions. (Further discussion of such effects and costs is found later in this Section, as well as in Sections C, G, and J of this Part.) We evaluate expected maintenance costs, replacement costs, situations of system stress, equipment reliability, and availability of replacement parts. We also look at equipment age if the equipment's primary function cannot be performed due to reduced equipment capability. (A more detailed discussion of the age and condition of our equipment and facilities is presented in Section G of this Part.)

When facility or equipment problems cannot be corrected through maintenance, we consider the remaining economic life of the facility or equipment, and determine the best way to address the situation (e.g., replace the equipment, provide back-up, or reconfigure the system so that the problematic equipment can be eliminated).

Having analyzed these various sources of information, we have identified a number of areas of our system in which to invest. We now turn to a discussion of those areas, first with respect to distribution and then with respect to transmission.

Distribution System Reliability Improvements

The key areas for investing in distribution reliability include:

Vegetation Management

The focus of vegetation management is tree trimming. We accelerated the pace of tree trimming in 1998, and we are increasing that pace even further for 1999 through 2001. In 1997, we budgeted $35 million per year for tree trimming for 1998, 1999, and 2000. In mid-1998 we added $6 million to the 1998 budget. Upon further assessment in the latter part of 1998, we decided to add $15 million a year for tree trimming in 1999 and 2000, a 42% increase, and an additional $0.6 million on top of the $35 million already budgeted for 2001. These investments will result in a total of approximately $135 million being spent on tree trimming between 1999 and 2001.

Distribution Infrastructure Refurbishment

The aim of this refurbishment, for which we have budgeted $332 million over the next three years, is to replace distribution facilities that are near the end of their useful life and to make reliability enhancements. The facilities being refurbished include poles, cables, relays, equipment, and wires. More than $95 million of this budget is for addressing emergent work. Also included in this budget are targeted customer programs.

Targeted Customer Programs: A new focus of our refurbishment is targeted customer programs. $30 million will be targeted toward individual customers or groups of customers who have experienced more than the normal number of interruptions. Previously, reliability dollars have been allocated and spent from a system perspective. We are adding this dimension to reliability spending to focus on individual customers and how they view the reliability of their electric service.

System Automation
This program, for which we have budgeted approximately $105 million over three years, will utilize automation technology in two specific areas to improve system performance:

Sectionalizing: Sectionalizing is a technology that allows us to automatically isolate failed sections of a circuit, thereby reducing the number of customers affected by the interruption. We will install appropriate sectionalizing on our 34,000-volt circuits. We also will implement pilot programs to test the effectiveness of this technology on 12,000-volt circuits.

Supervisory Control and Data Acquisition (SCADA): Installing supervisory control and data acquisition at all of our substations will allow us to receive immediate notification of the substations' status at a central location. With this technology, we can immediately determine the amount of power flowing through a substation, and if an interruption occurs, one of our dispatchers can respond appropriately. In addition, SCADA permits us to control equipment on its system remotely, which can facilitate interruption response and shorten interruption times for customers.

These automated installations allow for integrated monitoring and control, so we can respond to system and/or equipment conditions. Once they are complete, ComEd will be among the first large utilities in the United States to install SCADA on all of its 34,000-volt and 12,000-volt distribution systems and sectionalizing on its 34,000-volt system.

The implementation of the above programs throughout our system should significantly reduce the frequency and duration of interruptions. We therefore expect that these programs will help improve customer satisfaction.

In addition to undertaking these programs, we will perform studies and issue plans to help keep the amount of load, or power flowing through our system, at proper levels, under both normal and contingency (adverse) situations. Significant overloads of power over extended periods of time can shorten equipment life, which can eventually increase the frequency of interruptions. Elimination of significant overloads also helps us maintain our emergency switching capability.

Transmission System Reliability Improvements

The key areas for investing in transmission reliability include:

Transmission Infrastructure Refurbishment
The objective of these programs, for which we have budgeted $83.9 million over the next three years, is to replace facilities that are not performing as well as newer technologies might allow or that are near the end of their useful life. In particular, we are developing and implementing upgraded protective relaying and communication systems. Specific improvements include transmission line protective relay upgrades, the installation of a protective relay fiber optic network on the 69,000-volt and 138,000-volt transmission system in the City of Chicago, and a fault- locating program on our 345,000-volt lines.

In addition, we continuously monitor our transmission lines and substations for declining performance trends to help identify places for upgrading or replacing facilities.

Targeted Programs
The aim of these programs, for which we have budgeted $4.3 million during the next three years, is to identify and repair problems

that cause interruptions to customers served off the transmission system, regardless of overall statistical performance of the circuit. Under these programs, as under the targeted programs for distribution circuits, the circuits are selected based on customer interruption history.

We expect that these investments, like our distribution investments, will help improve the reliability of our system, and therefore help improve customer satisfaction.

Transmission and Distribution Reliability Challenges

In coming years, we expect to continue to face challenges to maintaining reliable transmission and distribution service. We have identified many of those challenges already and have established plans to address them. As noted in the Introduction, our three-year capital budget is approximately $1.4 billion. Below in Table 1 is a list of specific projects, along with a timetable for completing those projects. For simplicity, we have organized this list using the areas for reliability improvements previously discussed.

Table 1: Projects Associated with Transmission and Distribution Challenges

Project Title	Work Scope	Timetable
Challenge: Vegetation Management		
1% Worst Circuits Program	This vegetation program is conducted in conjunction with the 1% Worst Circuits program based on SAIFI values (described below) and involves tree maintenance along the identified circuits. The maintenance entails research of the trees' histories, a patrol of those trees, an identification of tree problems, and the scheduling of maintenance tasks.	Annual Program
Challenge: Transmission and Distribution Infrastructure Refurbishment		
Transmission Relay Upgrade Program	This refurbishment program entails replacement of transmission relays to meet new standards and practices.	Annual Program
Transmission Relay Communications Upgrade	This program is focused on replacing obsolete analog-microwave communications equipment, and is part of a long-term plan being implemented to replace relay communications with digital technology. A pilot upgrade is on going in the City of Chicago, which will be complete by the end of 1999.	On-going
Digital Fault Analysis Program	This program involves updating fault recorder systems to make the digital readings available for analysis. These readings enable quicker and more accurate identification of faults. They also assist dispatchers in sending out crews to remedy interruptions.	On-going
Control Building Location Program	This program involves the relocation of SCADA and protection equipment into switchyard buildings outside the fossil plants in order to enable the Company to maintain access to equipment and SCADA information once the fossil units become independently owned. It will also permit unattended, efficient operation of these switchyards.	On-going
Assessment of Performance of Cable in Conduit	This proactive program involves the assessment of the performance of cable in conduit to identify any such cable not performing at desired levels. We test specific sections. Cable that is deteriorated beyond repair is replaced.	Annual Program
Facility Maintenance	This work includes facility and field inspections, maintenance, elimination of clearance violations, replacement of vault/manhole roofs, repair or replacement of damaged or deteriorated poles, and replacement of anodes, cathodes and/or rectifiers. The facility and fieldwork identified by the pole inspection program or other like investment work is given a high priority. Other investment work correcting safety problems also is given a high priority.	Annual Program
Facility Maintenance (4,000-Volt Circuit Vault Rehabilitation)	This work involves the rehabilitation and/or replacement of underground vaults used for 4,000-volt distribution circuits, and focuses on safety issues and the replacement of non-conforming equipment to current specifications.	Annual Program
Power Quality Remediation	This work is associated with correction of power quality problems other than steady state voltage problems, and focuses on customer-specific remediation.	Emergent Program
Replacement of Direct Burial Cable	This technical program is for replacing segments of underground cable that have experienced multiple faults in a section over a period of time.	Year End 1999
Cable Space Replacement Project	This is a pilot project that involves the assessment and, if necessary, replacement of the first cable section for distribution circuits served by substations. Four substations are scheduled in 1999 for cable assessment and possible replacement.	Year End 2001
Deteriorated Pole Replacement	This program involves the replacement of deteriorated poles that have been identified through the on-going facility inspection program and that cannot be adequately reinforced. The program uses the industry-standard assumption that of the deteriorated poles identified through the facility inspection program, approximately 80 percent can be corrected through standard industry reinforcement procedures.	Annual Program

Project Title	Work Scope	Timetable
Distribution Circuit Remediation (4,000-Volt and 12,000-Volt Circuit Rehabilitation)	This remediation involves the rehabilitation to current design standards and practices of 4,000-volt and 12,000-volt circuits.	Annual Program
Sub-Transmission Circuit Remediation (34,000-Volt Circuit Rehabilitation)	This remediation involves the rehabilitation to current design standards and practices of 34,000-volt circuits.	Annual Program
Emergency Tasks	This work is performed to resolve a safety concern or interruption as quickly as possible, or to restore the system configuration to normal as quickly as possible.	Emergent
Emergency Cable Replacement	This cable replacement work is performed to resolve a safety concern or interruption as quickly as possible, or to restore the system configuration to normal as quickly as possible.	Emergent
Emergency Pole Replacement	This pole replacement work, which involves poles that have been identified through the ongoing facility inspection program as an imminent risk to the health and safety of the public, employees, or contractors, is performed as quickly as possible.	Emergent
Find and Fix Program	The projects performed under this program have been identified in the course of performing other work, such as routine maintenance, public improvements, or switching. These projects are not safety-related and are not related to customer interruptions.	Annual Program
Challenge: Targeted Programs		
Distribution Circuit Indices (General)	This annual program is for addressing common causes of poor circuit performance. It includes systematic programs to address specific interruption causes (e.g., lightning, wildlife).	Annual Program
Distribution Circuit Remediation (More than 6 Controllable Interruptions on Circuits at or below 15,000 Volts)	This proactive program is for addressing the root cause of performance issues that have resulted in more than 6 controllable interruptions each year to customers served on a circuit at or below 15,000 volts.	Annual Program
Distribution Circuit Remediation (More than 18 Hours of Controllable Interruption Duration on Circuits at or below 15,000 Volts)	This proactive program is for addressing the root cause of performance issues that have resulted in more than 18 hours of controllable interruption duration each year to customers served on a circuit at or below 15,000 volts.	Annual Program
Sub-Transmission Circuit Remediation (More than 4 Controllable Interruptions on Circuits above 15,000 Volts but below 69,000 Volts)	This proactive program is for addressing the root cause of performance issues that have resulted in more than 4 controllable interruptions each year to customers served on a circuit above 15,000 volts but below 69,000 volts.	Annual Program
Sub-Transmission Circuit Remediation (More than 12 Hours of Controllable Interruption Duration on Circuits above 15,000 Volts but below 69,000 Volts)	This proactive program is for addressing the root cause of performance issues that have resulted in more than 12 hours of controllable interruption duration each year to customers served on a circuit above 15,000 volts but below 69,000 volts.	Annual Program

Project Title	Work Scope	Timetable
Transmission Circuit Remediation (More than 3 Controllable Interruptions on Circuits at or above 69,000 Volts)	This proactive program is for addressing the root cause of performance issues that have resulted in more than 3 controllable interruptions each year to customers served on a circuit at or above 69,000 volts.	Annual Program
Transmission Circuit Remediation (More than 9 Hours of Controllable Interruption Duration on Circuits at or above 69,000 Volts)	This proactive program is for addressing the root cause of performance issues that have resulted in more than 9 hours of controllable interruption duration each year to customers served on a circuit at or above 69,000 volts.	Annual Program
Distribution Circuit Remediation (Multiple Protective Device Operations)	This broad program is for addressing the root cause of performance issues that have resulted in the non-routine operation of a specific protective device.	Annual Program
Distribution Circuit Remediation (Worst 1% as Ranked by CAIDI)	This program is for addressing the performance issues on the "Worst 1% Circuits" in each operating area ranked by the annual Customer Average Interruption Duration Index (CAIDI), calculated on a circuit basis. Our Chicago, Northeast, Southern, and Northwest operating areas are ranked independently.	Annual Program
Distribution Circuit Remediation (Worst 1% as Ranked by SAIFI)	This program is for addressing the performance issues on the "Worst 1% Circuits" in each operating area ranked by the annual System Average Interruption Frequency Index (SAIFI), calculated on a circuit basis. Our Chicago, Northeast, Southern, and Northwest operating areas are ranked independently.	Annual Program
Distribution Circuit Remediation (Worst 1% as Ranked by CAIFI)	This program is for addressing the performance issues on the "Worst 1% Circuits" in each operating area ranked by the annual Customer Average Interruption Frequency Index (CAIFI), calculated on a circuit basis. Our Chicago, Northeast, Southern, and Northwest operating areas are ranked independently.	Annual Program
Elbow Arrester Program	This program, which is coordinated with the lock inspection program, involves the installation of elbow surge lightning arresters at all normally open points on underground residential distribution system loops. Where possible, such arresters are also installed in radial-fed transformers.	Annual Program
Voltage Violation Correction	This work is issued to correct normal steady state voltage conditions that are outside Commission guidelines. The work includes the rebuilding of 4,000-volt circuits to 12,000-volt circuits when performed for voltage correction, as well as the replacement of primary and secondary conductors, regulators, and 12,000-volt and 34,000-volt capacitors.	Annual Program
Challenge: Distribution and Sub-Transmission System Automation		
Distribution Circuit Automation (12,000-volt Circuits)	This pilot program is for automating 12,000-volt circuits, including options such as Automatic Circuit Reconfiguration Sectionalizing schemes, cable fault indicators, customer, interruption indicators, and meter interruption intelligence.	End of 2001
Sub-Transmission Circuit Automation (34,000-volt Circuits)	This automation program involves the installation of Automatic Circuit Reconfiguration Sectionalizing schemes, cable fault indicators, customer interruption indicators, and meter interruption intelligence on our 34,000-volt sub-transmission system.	End of 2001

Transmission and Distribution System Budget

In meeting the needs of our customers, we not only develop programs for maintaining and improving reliability, but also prepare appropriate budgets to support those activities. Our transmission and distribution organization operates within a three-year budgeting cycle, which currently covers 1999 through 2001, and uses a corresponding business plan to organize its efforts.

We develop our budgets based on the projects and programs we expect to implement, working within overall funding limits. Accordingly, our transmission and distribution capital budget is designed for specific infrastructure work projects. This budget, which is sometimes called the Capital Work Plan, is divided into work categories. Table 2 describes our capital budgets for 1999 through 2001 by work category, and offers a description of work to be completed in each category.

Table 2: 1999 - 2001 Transmission and Distribution Capital Budgets by Work Category

WORK CATEGORY	BUDGET ($millions) 1999	2000	2001
Transmission and Distribution External Work Requests: This work originates from external customers. Because this work is external, we have little control over its scope, and therefore manage it primarily to meet the customer's schedule. Included in this category are new electric service requests, public improvement work, and non-service requests, such as fiber optic installation on ComEd facilities.	$21	$24	$24
Transmission and Distribution Bulk Power System Capacity Work: This work is performed on the Bulk Power System, and is driven by system capacity and stability.	$29	$22	$28
Transmission and Distribution Retail System Capacity Work: This work is performed on the delivery system to help implement the Delivery Service Tariff, and is related to circuit and substation capacity needs.	$55	$40	$45
Transmission and Distribution Remaining Life Management- Bulk Power System: **Transmission and Distribution Remaining Life Management- Retail Power System:** Work in this area involves maintaining or improving the performance of current assets (including capital rehabilitative work). A key component to this work is our "Remaining Economic Life Assessment Process." The work is separated between the Bulk Power System and the Retail Power System, and covers substations, distribution centers, protection and control (relaying), and lines and circuits (cable replacement, pole replacement, and rehabilitation).	$12 $93	$14 $112	$12 $101
Transmission and Distribution System Strategic and Risk Management: Strategic initiatives in this area include property acquisition and reliability enhancements, such as distribution automation, improvement of performance on distribution circuit indices and customer targets, improvement of circuits ranked in the worst 1% of circuits, upgrades of poles inspected and found to require work, and improvement of frequently interrupted devices. Risk management in this area includes purchases of spare equipment.	$79	$108	$107
Transmission and Distribution Corporate Strategic Work: This work on the transmission and distribution system is driven by corporate strategic objectives, such as support for a robust wholesale supply market. This support includes modifications to the transmission system to connect independent power producers and modifications to the existing station switchyards to support the sale of the fossil generating units.	$30	$38	$42
Transmission and Distribution Other Work: This work involves upgrading tools, trucks, and information technology, as well as performing new miscellaneous business work.	$127	$127	$127

Finally, we note that the Commission's Reliability Rules require us to report and address all unresolved reliability complaints about our system that we have received from other utilities, independent system operators, and alternative retail electric suppliers, and to report the specific actions, if any, that we are taking to address the concerns raised in such complaints. We had no such complaints in 1998.

Section 411.120 (b)(3)(B): *"A report of the jurisdictional entity's implementation of its plan filed pursuant to subsection (b)(3)(A) of this Section for the previous annual reporting period, including an identification of significant deviations from the first year of the previous plan and the reasons for the deviations."*

B. Implementation of Previous Year's Plan

This section requires us to report on the implementation of our plan for future investment filed pursuant to Section 411.120 (b)(3)(A) for the previous annual reporting period. Because this is the first annual report that we have filed under the Commission's Reliability Rules, there is no previous annual reporting period. We will, however, present a report on the implementation of this year's plan for future investment (discussed in Section A of this Part) in our annual reliability report next year.

Section 411.120 (b)(3)(C): *"The number and duration of planned and unplanned interruptions for the annual reporting period and their impacts on customers."*

C. Number and Duration of Planned and Unplanned Interruptions

In 1998, as in any year, ComEd's delivery system was subject to both planned and unplanned interruptions. Planned interruptions are scheduled in order to perform various activities, such as routine maintenance, equipment testing, installation of new or upgraded equipment, and repair work. Unplanned interruptions, on the other hand, are interruptions that we have not scheduled, but rather that occur due to various factors, such as storms or equipment failure (e.g., cable faults).

We understand that interruptions, whether planned or unplanned, can inconvenience our customers (e.g., inability to use electric appliances, inability to operate computer equipment). As a result, we attempt to minimize the impact of interruptions by providing information about the interruption and by working to reduce the number and duration of interruptions that our customers do experience.

For instance, for planned interruptions, we have developed a process for notifying customers who will be affected so they can plan around the interruptions. We notify the customer of the planned interruption by letter if there is more than 48 hours notice of the interruption, or by phone call if there is less than 48 hours. In addition, under our ComEd Commitment program, we guarantee that if we fail to notify a customer within 24 hours of a planned interruption, we will pay the customer $25.

To minimize the inconvenience caused by unplanned interruptions, we have restructured our Distribution Dispatch Center to provide more efficient dispatch operations and enhanced information to affected customers and municipalities. All of our dispatch operations are centralized in one facility in Joliet, and we now staff the Dispatch Center with public affairs and communications personnel during storms to help provide information to the media, affected municipalities, and customers.

Currently, we are conducting a pilot program to inform customers about extended interruptions that occur during non-storm periods. When such an interruption occurs, we dispatch a troubleshooter to the scene. If the troubleshooter determines that service cannot be restored to customers within two hours (the length of time it normally takes to switch customers onto alternate circuits and restore service), we estimate the time it will take to make the necessary repairs. We then call customers on the affected circuit to let them know the estimate, allowing them to plan accordingly.

Tables 3 through 7 below provide summaries, on system and individual operating area levels, of the number and average duration of planned and unplanned interruptions in 1998. Interruption causes have been assigned on the basis of our investigation. Where we could not determine the cause, the interruption has been classified as "unknown." For animal-related interruptions, we have combined all numbers under "wildlife" because we did not systematically classify such interruptions by specific animal.

Table 3: 1998 Planned and Unplanned Interruptions System

Interruption Cause Category	Total Number of Interruptions	Average Interruption Duration (minutes)
Planned Interruptions		
Scheduled Construction, Maintenance, or Repair		
Fire Department	-	-
Police Department	17	248
Request By Municipal Authority	1	444
Public Request	71	123
Restore Back To Normal	14	114
Maintenance Switching	48	97
Public Improvement Related	25	127
New Business Related	9	116
Other	52	81
Unplanned Interruptions		
Other Alternative Retail Electric Supplier or Other Utility		
Loss of Supply	-	-
Operating Event	-	-
ComEd/Contractor Personnel-Errors		
Unclassified Error	52	181
Switching Error	40	81
Accident by ComEd	15	137
Testing Error	8	131
Dig-in by ComEd	35	139
Accident by ComEd Contractor	23	193
Dig-in by ComEd Contractor	64	224
Customer		
Overload	56	249
Customer Request	12	175
Customer Equipment	110	273
Non-payment of Bill	-	-
Tampering with Service	-	-
Access to Equipment Denied	-	-
Interruptible Service Tariff or Contract	-	-
Public		
Foreign Object	219	306
Fire	119	205
Vandalism	57	284
Accident by Others	1,004	214
Dig-in by Others	1,367	253
Vehicles	184	154

Interruption Cause Category	Total Number of Interruptions	Average Interruption Duration (minutes)
Weather Related		
Lightning	5,718	373
Wind	4,743	735
Ice	1,004	926
Extreme Cold	22	247
Extreme Heat	114	394
Flooding/Rain	401	374
Animal Related		
Wildlife	2,892	111
Birds	-	-
Snakes	-	-
Squirrels	-	-
Other	-	-
Tree Related		
Tree Contact		
Primary	1,992	384
Secondary	506	468
Service Drop	1,340	366
Limb Broken		
Primary	2,015	486
Secondary	722	701
Service Drop	1,195	462
Overhead Equipment Related		
Contamination	111	237
Malfunction	647	231
Broken Fuse Link	101	226
Underground Equipment Related		
Underground Failure	6,492	259
Contamination	8	392
Malfunction	234	287
Intentional		
Emergency Repairs	153	126
Protection of System Integrity	168	173
Transmission & Substation Equipment Related		
Contamination	7	134
Transmission System Outage	2	202
Substation Equipment	694	439
Unknown	8,418	281
Other	3,149	286

Table 4: 1998 Planned and Unplanned Interruptions
Chicago

Interruption Cause Category	Total Number of Interruptions	Average Interruption Duration (minutes)
Planned Interruptions		
Scheduled Construction, Maintenance, or Repair		
Fire Department	-	-
Police Department	1	57
Request By Municipal Authority	-	-
Public Request	1	316
Restore Back To Normal	3	80
Maintenance Switching	3	59
Public Improvement Related	2	199
New Business Related	-	-
Other	10	91
Unplanned Interruptions		
Other Alternative Retail Electric Supplier or Other Utility		
Loss of Supply	-	-
Operating Event	-	-
ComEd/Contractor Personnel-Errors		
Unclassified Error	11	220
Switching Error	5	130
Accident by ComEd	2	76
Testing Error	-	-
Dig-in by ComEd	-	-
Accident by ComEd Contractor	3	171
Dig-in by ComEd Contractor	2	519
Customer		
Overload	9	391
Customer Request	-	-
Customer Equipment	10	350
Non-payment of Bill	-	-
Tampering with Service	-	-
Access to Equipment Denied	-	-
Interruptible Service Tariff or Contract	-	-
Public		
Foreign Object	80	249
Fire	34	189
Vandalism	38	365
Accident by Others	57	222
Dig-in by Others	32	176
Vehicles	16	165

Interruption Cause Category	Total Number of Interruptions	Average Interruption Duration (minutes)
Weather Related		
Lightning	378	502
Wind	452	868
Ice	376	1,183
Extreme Cold	4	194
Extreme Heat	15	560
Flooding/Rain	105	416
Animal Related		
Wildlife	305	151
Birds	-	-
Snakes	-	-
Squirrels	-	-
Other	-	-
Tree Related		
Tree Contact		
Primary	405	456
Secondary	45	531
Service Drop	354	599
Limb Broken		
Primary	121	714
Secondary	78	958
Service Drop	239	639
Overhead Equipment Related		
Contamination	7	1,115
Malfunction	34	358
Broken Fuse Link	2	1,041
Underground Equipment Related		
Underground Failure	45	306
Contamination	1	883
Malfunction	5	276
Intentional		
Emergency Repairs	24	100
Protection of System Integrity	19	195
Transmission & Substation Equipment Related		
Contamination	1	113
Transmission System Outage	-	-
Substation Equipment	97	713
Unknown	1,068	353
Other	433	315

Table 5: 1998 Planned and Unplanned Interruptions Northeast

Interruption Cause Category	Total Number of Interruptions	Average Interruption Duration (minutes)
Planned Interruptions		
Scheduled Construction, Maintenance, or Repair		
Fire Department	-	-
Police Department	2	191
Request By Municipal Authority	1	444
Public Request	64	123
Restore Back To Normal	6	109
Maintenance Switching	17	159
Public Improvement Related	19	103
New Business Related	2	120
Other	12	104
Unplanned Interruptions		
Other Alternative Retail Electric Supplier or Other Utility		
Loss of Supply	-	-
Operating Event	-	-
ComEd/Contractor Personnel-Errors		
Unclassified Error	12	230
Switching Error	10	122
Accident by ComEd	8	173
Testing Error	4	119
Dig-in by ComEd	12	198
Accident by ComEd Contractor	8	223
Dig-in by ComEd Contractor	26	227
Customer		
Overload	27	290
Customer Request	8	228
Customer Equipment	72	285
Non-payment of Bill	-	-
Tampering with Service	-	-
Access to Equipment Denied	-	-
Interruptible Service Tariff or Contract	-	-
Public		
Foreign Object	61	341
Fire	37	194
Vandalism	5	148
Accident by Others	306	215
Dig-in by Others	541	264
Vehicles	54	130

Interruption Cause Category	Total Number of Interruptions	Average Interruption Duration (minutes)
Weather Related		
Lightning	1,241	438
Wind	1,633	791
Ice	304	612
Extreme Cold	2	285
Extreme Heat	30	339
Flooding/Rain	118	233
Animal Related		
Wildlife	952	102
Birds	-	-
Snakes	-	-
Squirrels	-	-
Other	-	-
Tree Related		
Tree Contact		
Primary	759	370
Secondary	160	400
Service Drop	456	272
Limb Broken		
Primary	774	525
Secondary	301	798
Service Drop	402	452
Overhead Equipment Related		
Contamination	43	187
Malfunction	182	311
Broken Fuse Link	45	238
Underground Equipment Related		
Underground Failure	3,041	261
Contamination	4	158
Malfunction	97	317
Intentional		
Emergency Repairs	45	172
Protection of System Integrity	55	225
Transmission & Substation Equipment Related		
Contamination	1	95
Transmission System Outage	-	-
Substation Equipment	348	481
Unknown	2,424	281
Other	1,306	300

Table 6: 1998 Planned and Unplanned Interruptions
Southern

Interruption Cause Category	Total Number of Interruptions	Average Interruption Duration (minutes)
Planned Interruptions		
Scheduled Construction, Maintenance, or Repair		
Fire Department	-	-
Police Department	10	141
Request By Municipal Authority	-	-
Public Request	2	148
Restore Back To Normal	3	203
Maintenance Switching	14	84
Public Improvement Related	3	231
New Business Related	5	100
Other	21	71
Unplanned Interruptions		
Other Alternative Retail Electric Supplier or Other Utility		
Loss of Supply	-	-
Operating Event	-	-
ComEd/Contractor Personnel-Errors		
Unclassified Error	11	182
Switching Error	12	42
Accident by ComEd	2	32
Testing Error	1	216
Dig-in by ComEd	15	95
Accident by ComEd Contractor	4	376
Dig-in by ComEd Contractor	27	203
Customer		
Overload	7	144
Customer Request	2	83
Customer Equipment	18	194
Non-payment of Bill	-	-
Tampering with Service	-	-
Access to Equipment Denied	-	-
Interruptible Service Tariff or Contract	-	-
Public		
Foreign Object	41	532
Fire	27	230
Vandalism	8	129
Accident by Others	281	239
Dig-in by Others	452	298
Vehicles	52	162

Interruption Cause Category	Total Number of Interruptions	Average Interruption Duration (minutes)
Weather Related		
Lightning	2,086	421
Wind	1,408	847
Ice	283	1,025
Extreme Cold	5	497
Extreme Heat	60	408
Flooding/Rain	87	458
Animal Related		
Wildlife	885	123
Birds	-	-
Snakes	-	-
Squirrels	-	-
Other	-	-
Tree Related		
Tree Contact		
Primary	310	411
Secondary	138	494
Service Drop	195	308
Limb Broken		
Primary	312	562
Secondary	145	628
Service Drop	208	533
Overhead Equipment Related		
Contamination	8	321
Malfunction	88	271
Broken Fuse Link	31	214
Underground Equipment Related		
Underground Failure	1,896	279
Contamination	1	1,441
Malfunction	34	301
Intentional		
Emergency Repairs	54	148
Protection of System Integrity	54	155
Transmission & Substation Equipment Related		
Contamination	1	255
Transmission System Outage	1	360
Substation Equipment	165	300
Unknown	3,166	277
Other	815	289

Table 7: 1998 Planned and Unplanned Interruptions
Northwest

Interruption Cause Category	Total Number of Interruptions	Average Interruption Duration (minutes)
Planned Interruptions		
Scheduled Construction, Maintenance, or Repair		
Fire Department	-	-
Police Department	4	593
Request By Municipal Authority	-	-
Public Request	4	59
Restore Back To Normal	2	49
Maintenance Switching	14	44
Public Improvement Related	1	125
New Business Related	2	153
Other	9	60
Unplanned Interruptions		
Other Alternative Retail Electric Supplier or Other Utility		
Loss of Supply	-	-
Operating Event	-	-
ComEd/Contractor Personnel-Errors		
Unclassified Error	18	124
Switching Error	13	66
Accident by ComEd	3	120
Testing Error	3	136
Dig-in by ComEd	8	135
Accident by ComEd Contractor	8	79
Dig-in by ComEd Contractor	9	209
Customer		
Overload	13	120
Customer Request	2	57
Customer Equipment	10	258
Non-payment of Bill	-	-
Tampering with Service	-	-
Access to Equipment Denied	-	-
Interruptible Service Tariff or Contract	-	-
Public		
Foreign Object	37	122
Fire	21	216
Vandalism	6	85
Accident by Others	360	192
Dig-in by Others	342	182
Vehicles	62	165

Interruption Cause Category	Total Number of Interruptions	Average Interruption Duration (minutes)
Weather Related		
Lightning	2,013	258
Wind	1,250	488
Ice	41	217
Extreme Cold	11	147
Extreme Heat	9	205
Flooding/Rain	91	425
Animal Related		
Wildlife	750	91
Birds	-	-
Snakes	-	-
Squirrels	-	-
Other	-	-
Tree Related		
Tree Contact		
Primary	518	332
Secondary	163	497
Service Drop	335	282
Limb Broken		
Primary	808	385
Secondary	198	506
Service Drop	346	309
Overhead Equipment Related		
Contamination	53	148
Malfunction	343	165
Broken Fuse Link	23	147
Underground Equipment Related		
Underground Failure	1,510	228
Contamination	2	91
Malfunction	98	253
Intentional		
Emergency Repairs	30	39
Protection of System Integrity	40	114
Transmission & Substation Equipment Related		
Contamination	4	118
Transmission System Outage	1	43
Substation Equipment	84	218
Unknown	1,760	245
Other	595	230

Section 411.120 (b)(3)(D): *"The number and causes of controllable interruptions for the annual reporting period."*

D. Number and Causes of Controllable Interruptions

In 1998, as in any year, some of the interruptions on our delivery system were controllable. Controllable interruptions are interruptions that are caused or exacerbated in scope and duration by the condition of facilities, equipment, or premises that we own or operate, or by the action or inaction of persons under our control, and that could have been prevented through the use of generally accepted engineering, construction, or maintenance practices.

In Table 8, we provide, on system and individual operating area levels, the number and causes of controllable interruptions on our system during 1998 (identification of causes is discussed in Section C of this Part). In preparing data for this table, we recognized that while some causes, such as a switching error by one of our employees, could be readily categorized as "controllable," others could not. We therefore needed a method to account for these other causes. In determining that method, we recognized that it would be impractical for our field personnel to assess the "controllability" or "uncontrollability" of each individual interruption. For instance, it is impossible for them to determine during a storm if the energy of a specific lightning stroke was within the engineering design specifications for the lightning protection on a circuit. We also recognized that labeling a particular interruption "controllable" or "uncontrollable" often would be impossible because in many cases controllability or uncontrollability is simply not apparent.

To overcome these obstacles, we used a statistical method to determine the percentage of interruptions that were "controllable." We first assigned, wherever possible, industry-recognized percentages to each cause. For instance, we assigned fifty percent to wildlife interruptions, reflecting the industry view that about half of such interruptions can be avoided by deploying additional guards. Where industry numbers were not available, we looked to technical literature, root cause analysis, and field experience to arrive at a percentage. (Because the concept of controllable/uncontrollable analysis is new in the state, we expect that over time we may develop other techniques for deriving percentages.)

We then took the entire list of interruptions, removed those that were due to severe storms, and applied the controllable percentages to the remaining interruptions. The results are provided in Table 8.

Table 8: Controllable Interruptions – 1998

	Controllable Interruptions				
Interruption Cause Category	**Chicago**	**Northeast**	**Southern**	**Northwest**	**System**
Other Alternative Retail Electric Supplier or Other Utility					
Loss of Supply	-	-	-	-	-
Operating Event	-	-	-	-	-
ComEd/Contractor Personnel-Errors					
Unclassified Error	10	11	10	16	47
Switching Error	5	9	11	12	37
Accident by ComEd	2	7	2	3	14
Testing Error	-	4	1	3	8
Dig-in by ComEd	-	11	14	7	32
Accident by ComEd Contractor	3	7	4	7	21
Dig-in by ComEd Contractor	2	23	24	8	57
Customer					
Overload	-	-	-	-	-
Customer Request	-	-	-	-	-
Customer Equipment	-	-	-	-	-
Non-Payment of Bill	-	-	-	-	-
Tampering with Service	-	-	-	-	-
Access to Equipment Denied	-	-	-	-	-
Interruptible Service Tariff or Contract	-	-	-	-	-
Public					
Foreign Object	-	-	-	-	-
Fire	-	-	-	-	-
Vandalism	-	-	-	-	-
Accident by Others	-	-	-	-	-
Dig-in by Others	-	-	-	-	-
Vehicles	-	-	-	-	-
Weather Related					
Lightning	19	61	144	142	366
Wind	19	48	53	46	166
Ice	8	8	12	4	32
Extreme Cold	1	-	1	2	4
Extreme Heat	1	4	6	1	12
Flooding/Rain	16	19	12	6	53
Animal Related					
Wildlife	153	476	443	375	1,447
Birds	-	-	-	-	-
Snakes	-	-	-	-	-
Squirrels	-	-	-	-	-
Other	-	-	-	-	-
Tree Related					
Tree Contact					
Primary	165	366	135	261	927
Secondary	19	77	89	41	226
Service drop	259	318	141	188	906
Limb Broken					
Primary	9	65	24	65	163
Secondary	4	9	10	10	33
Service drop	25	36	23	35	119

D. Number and Causes of Controllable Interruptions

Interruption Cause Category	Controllable Interruptions Chicago	Northeast	Southern	Northwest	System
Overhead Equipment Related					
Contamination	1	4	1	5	11
Malfunction	3	18	9	34	64
Broken fuse link	-	5	3	2	10
Underground Equipment Related					
Underground Failure	5	304	190	151	650
Contamination	-	-	-	-	1
Malfunction	1	10	3	10	24
Intentional					
Scheduled Construction, Maintenance or Repair	-	-	-	-	-
Emergency Repairs	-	-	-	-	-
Protection of System Integrity	-	-	-	-	-
Transmission and Substation Equipment Related					
Contamination	-	-	-	-	-
Transmission System Outage	-	-	-	-	-
Substation Equipment	10	35	17	8	70
Unknown	171	388	507	282	1,348
Other	69	209	130	95	503
Total Controllable Interruptions	980	2,532	2,019	1,819	7,350

Section 411.120 (b)(3)(E): *"Customer service interruptions that were due solely to the actions or inactions of another utility, another jurisdictional entity, independent system operator, or alternative retail electric supplier for the annual reporting period."*

E. Interruptions Caused by Other Entities

This section requires us to report on customer service interruptions that were due solely to the actions or inactions of another utility, another jurisdictional entity, independent system operator, or alternative retail electric supplier for the annual reporting period. There were no such interruptions in 1998 on our transmission and distribution system.

Section 411.120(b)(3)(F): *"A comparison of interruption frequency and duration for customers buying electric energy from the jurisdictional entity versus customers buying electric energy from another utility or alternative retail electric supplier for the annual reporting period. A jurisdictional entity may base this comparison on each customer's supplier as of December 31 of each year. A jurisdictional entity need not include this information for customers whose electric energy supplier is not known to the jurisdictional entity."*

F. Comparison with Alternative Suppliers

This section requires us to provide a comparison of interruption frequency and duration for customers buying electric energy from ComEd versus customers buying electric energy from another utility or alternative retail electric supplier for the annual reporting period.

Customer choice will be introduced in Illinois beginning in October 1999. In our annual reliability report next year, the comparison will be based on data from October through December 1999.

Section 411.120(b)(3)(G): *"A report of the age, current condition, reliability and performance of the jurisdictional entity's existing transmission and distribution facilities, which shall include, without limitation, the data listed below. In analyzing and reporting the age of the jurisdictional entity's plant and equipment, the jurisdictional entity may utilize book depreciation. Statistical estimation and analysis may be used when actual ages and conditions of facilities are not readily available. The use of such techniques shall be disclosed in the report."*

G. Report on Age, Condition, Reliability and Performance

In this section, we report on the age, condition, reliability and performance of our existing transmission and distribution facilities. This review contains a range of both quantitative and qualitative assessments, including:

- a qualitative characterization of the condition of our system;
- a summary of interruptions and voltage variances on our system;
- a discussion of our expenditures for transmission construction and maintenance;
- a discussion of our expenditures for distribution construction and maintenance;
- results of customer satisfaction surveys on our reliability and service; and
- an overview of customer reliability complaints.

Our discussion of these topics shows that our facilities are designed, built, and maintained to be consistent with accepted engineering practices, and are properly protected from a reliability perspective. It also shows that we have made significant expenditures to maintain and improve reliability.

Section 411.120 (b)(3)(G)(i): *"A qualitative characterization of the condition of the jurisdictional entity's system defining the criteria used in making the qualitative assessment, and explaining why they are appropriate."*

i. A Qualitative Characterization of the Condition of the System

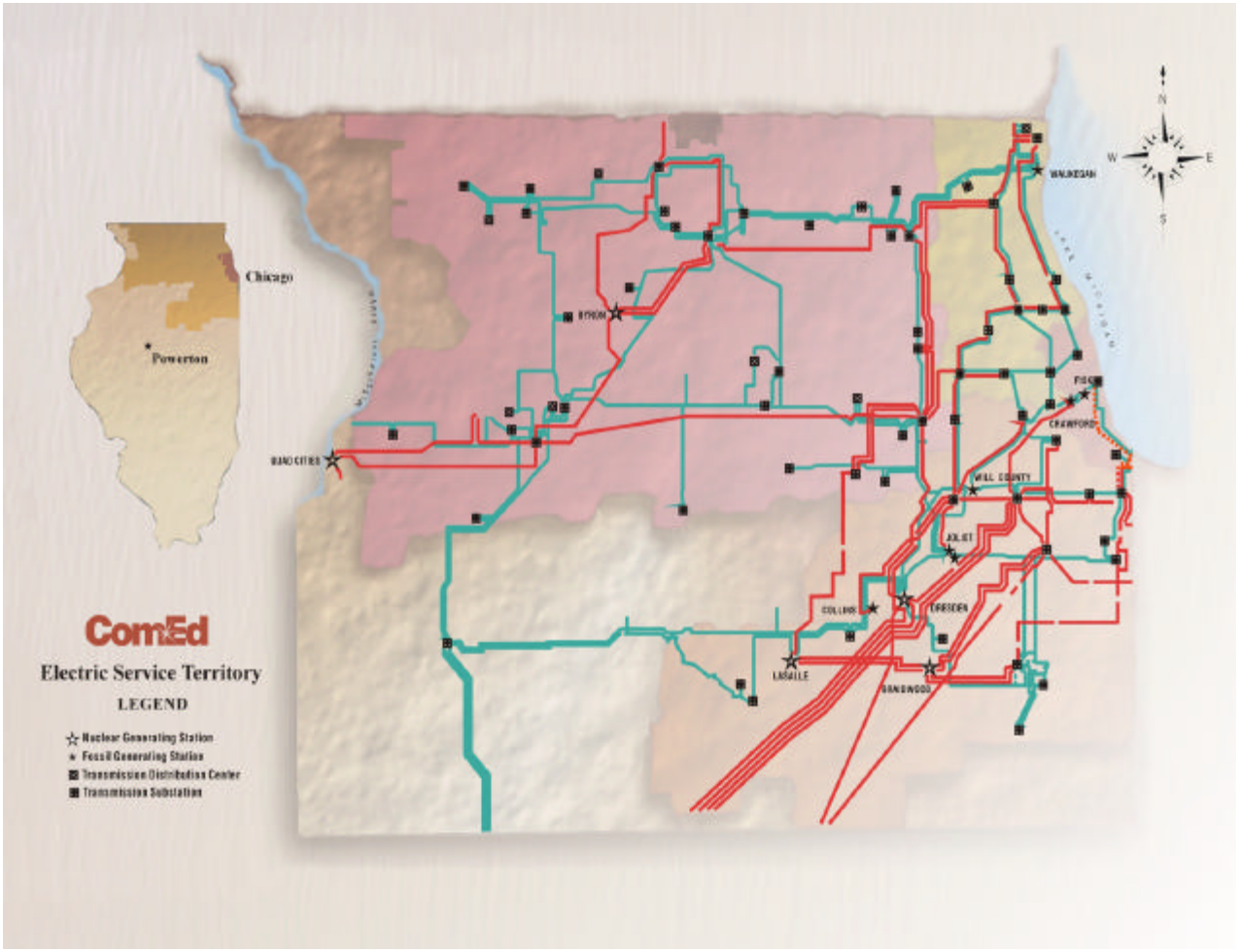
In this subsection, we discuss the condition of our system qualitatively. The guiding criteria for this discussion are accepted industry standards, along with our own knowledge of the system. These criteria are appropriate because they are based on long experience, a wide variety of circumstances, and good engineering practices.

Our qualitative assessment begins with an overview of our transmission and distribution system, and then turns to a discussion of the age of our equipment. We next look at external factors, such as trees, that can affect the condition of our system and measures we take to maintain the system in response to those factors. We then conclude by looking at our system's capacity to deliver power and the planning we do to help ensure that our capacity continues to be sufficient.

System Overview

Our transmission and distribution system is divided into four operating areas: Chicago, Northeast, Southern, and Northwest. Chicago is basically an urban environment, while the other three operating areas have urban, suburban, and rural elements. A portrayal of our service territory is set forth below in Figure 1.

Figure 1: ComEd Service Territory



Our transmission system is in particularly good condition. It consists of a well-designed and well-maintained grid of interconnected 765,000-volt, 345,000-volt, 138,000-volt, and 69,000-volt lines. These lines, which are both overhead and underground, provide an appropriate degree of redundancy of sources of electricity supply to our major substations. That is, if a line is not able to transmit power to a major substation, another line will immediately be able to take its place.

Our distribution system is also fundamentally sound. The design is typical of the electric industry, consisting generally of networked underground systems (found primarily in downtown Chicago), overhead radial systems (found in urban, suburban, and rural areas), and underground residential systems (found in urban and suburban areas). Basic layouts of these systems are shown in Figures 2 and 3 below. These various systems are fed from transmission and distribution substations. Because our transmission system is robust, the electricity supply to the distribution system is quite reliable.

Figure 2: Network System

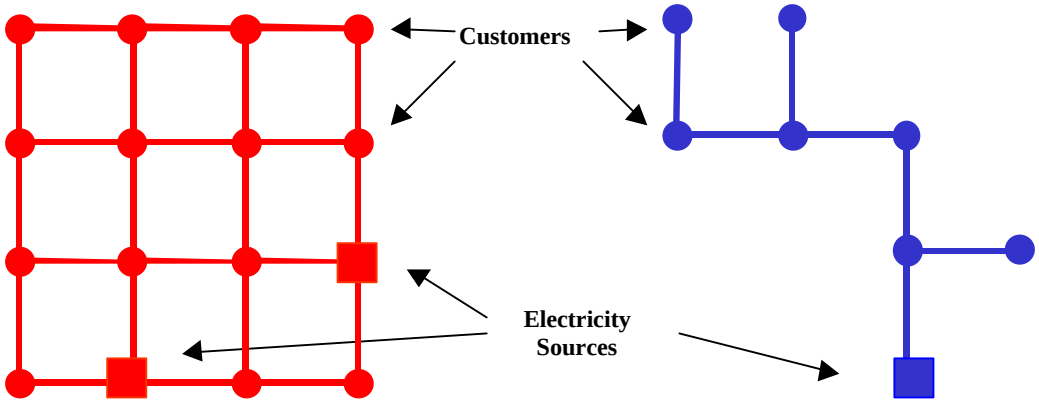


Figure 3: Radial System

Equipment Age

Although equipment age is not necessarily indicative of reliability, it is an important factor to consider when planning the overall maintenance of the system. In general, the age of our equipment correlates to the history of growth in our load. This is because, in large part, we have installed equipment to support that growth. Thus, we have tended to install more equipment when our load growth has been higher, and less equipment when that growth has been lower. In addition, the age of our equipment correlates to the availability of new technology (such as new, more effective lightning protection).

In the next few pages, we present a detailed analysis of the age of our system. We discuss major types of equipment, looking at their median ages (the age where there are an equal number of pieces of younger and older equipment) and their age distributions in five-year increments.

Lightning Arresters

Lightning arresters are used to help protect equipment from lightning strikes. The age profile of distribution lightning arresters shows a median age of about 13 years. The skew towards younger ages reflects our aggressive installation policy during the last 25 years and the introduction of more effective lightning arresters. Before that, arresters were used mainly for transmission lines and substations. The total number of transmission line arresters, which have a median age of about 31 years, and substation arresters, which have a median age of about 29 years, is far smaller than the total number of arresters used in the distribution system.

Figure 4: Number of Distribution Lightning Arresters

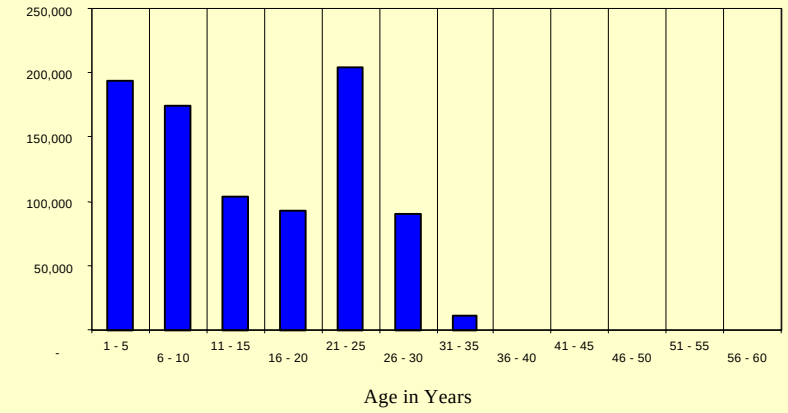
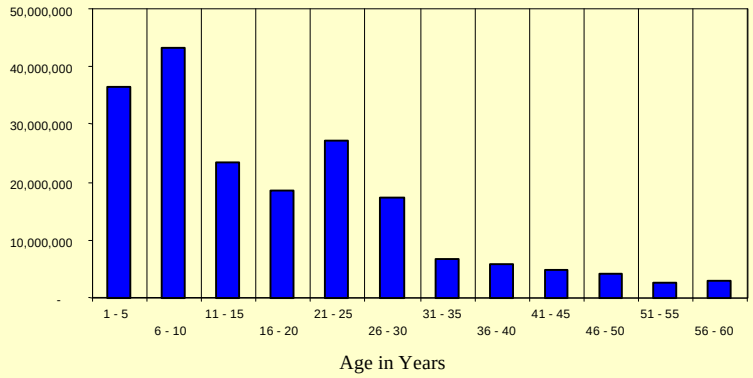


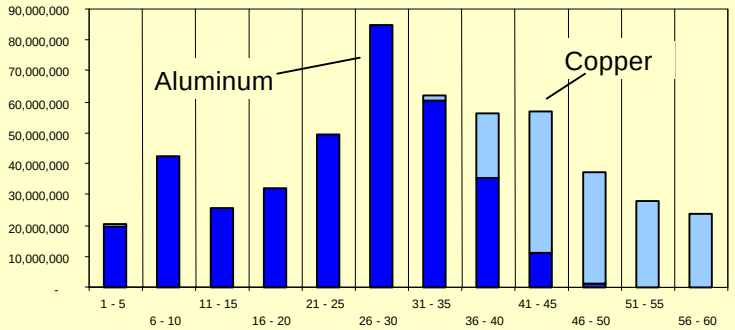
Figure 5: Feet of Buried Cable (Primary)



Buried Cables

Buried cables, which are used for underground residential distribution, have a median age of about 15 years. While there is a fairly broad distribution in the age of buried cable, the vast majority of the equipment is less than 30 years old. The growth in the use of buried cable closely matches load growth over the last 50 years. Two factors drive the amount of new cable installed each year. First, new load added to the system requires additional cable. Second, cable needs to be replaced when it is damaged or not performing well (such as some batches of cross-linked polyethylene cable now being replaced across the system).

Figure 6: Feet of Overhead Distribution Conductors



Conductors

Conductors (wires) are used throughout our overhead transmission and distribution system to move electricity. Our distribution conductors show distinct age profiles for copper and aluminum. This is because about 40 years ago, the industry switched from using copper to using aluminum for most conductor applications. This change is clearly seen in Figure 7. The median age of copper conductors is about 50 years, while the median age of aluminum conductors is about 28 years. As with cables, we have installed a considerable number of new conductors since 1960 to facilitate load growth. For transmission conductors, the ages are associated with the addition of new generation. After our Byron and Braidwood stations were completed in 1987 and 1988, respectively, there was a decrease in transmission conductor growth. The transmission conductor median age is about 30 years.

Poles and Towers

Poles and towers are used to support transmission and distribution wires that run throughout our service territory. The vast majority (over 1.3 million) of our poles and towers are used for distribution. For distribution poles, most of which are made of wood, the median age is about 32 years. For the transmission system, which has a total of approximately 28,000 poles and towers, the median ages are about 26 years for steel poles, about 35 years for wood poles, and about 33 years for towers. Because wood poles are expected to last a long time in our climate and soil conditions, the median ages of our poles and towers are largely driven by the capacity expansion of our system.

Figure 7: Number of Distribution Poles

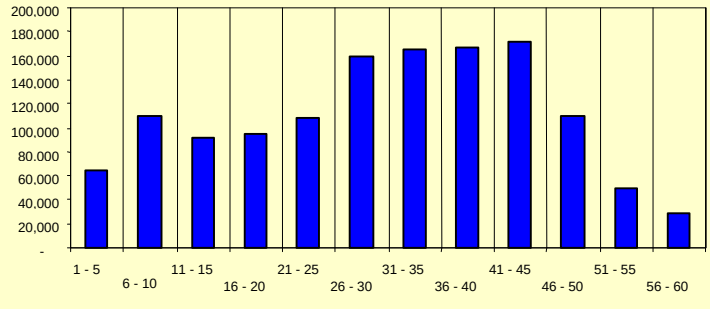
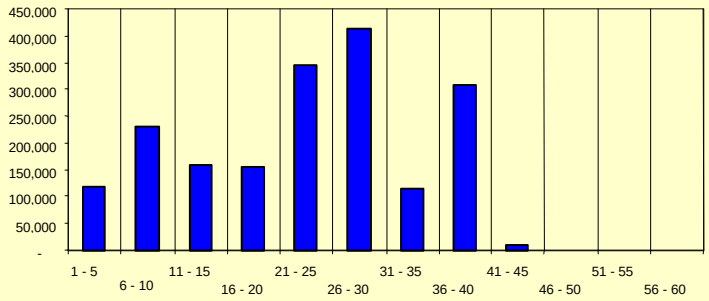


Figure 8: Number of Crossarms



Crossarms

Crossarms are attached at the top of distribution poles and are used to support and maintain separation of conductors. Our distribution system crossarms show a median age of about 25 years. At first glance it might seem to make sense to compare crossarm median age to distribution pole median age (which is about 32 years). This comparison should not be made, however, as crossarm life may be shorter than pole life based on the materials used in the crossarm and their durability.

Meters

Meters, used to measure electrical usage and/or demand, have a median age of about 22 years. The installation of new meters (due to new construction, specific customer requests, or demand side management actions) is the key influence on the median meter age.

Figure 9: Number of Meters

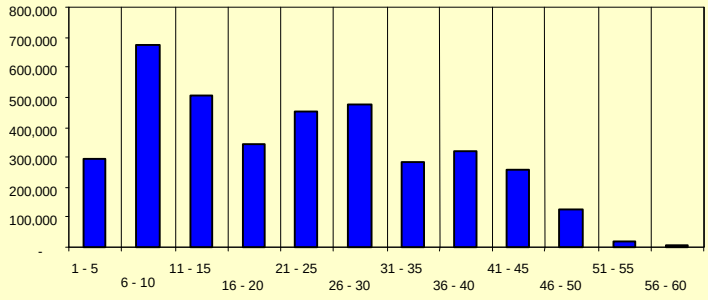
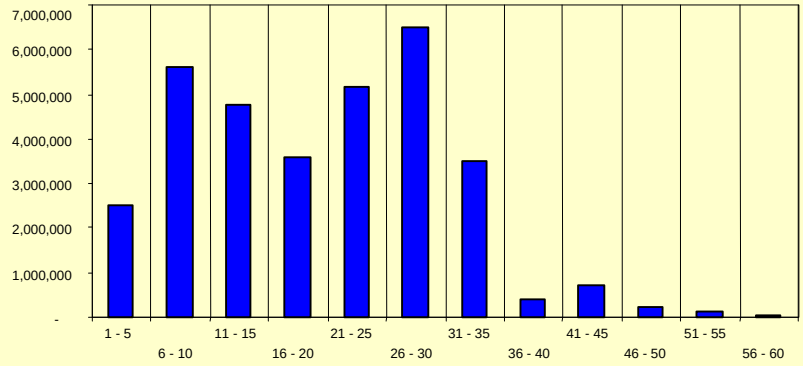


Figure 10: Capacity of Distribution Transformers



Distribution Transformers

Distribution transformers are used to transform higher voltage electricity to lower voltage for use by our customers. The age profile for these transformers, which is presented in Figure 11, shows a median age of about 20 years. This skew toward younger ages reflects our aggressive installation to accommodate load growth in the past four decades. The number of substation transformers shows a similar median age of 20 years and shift in age profile for the same reason.

External Factors and Maintenance of the System

The condition of our system also involves external factors that can affect reliability. We take various measures to address these factors so we can maintain our system.

One of the most important factors that affects the condition of our system is vegetation. For most utilities, and ComEd in particular, trees are the single largest cause of interruptions, especially in terms of their impact on the duration of customer interruptions. Studies of the proper type and amount of tree trimming have been conducted by various utilities, and the consensus is that, in general, approximately a four-year trim cycle is ideal in balancing cost and reliability. We have established a goal of a four-year trim cycle (with necessary touch-up trimming during the second year). To this end, we are accelerating spending on tree trimming to achieve a four-year trim cycle by the end of 2001 and intend to maintain that cycle thereafter.

Other external factors also affect our system by causing interruptions. As discussed more in subsection ii of this Section, as well as in Section C of this Part, these other factors include weather (e.g., lightning) and wildlife (e.g., squirrels). As with trees, we analyze these challenges to our system and develop strategies to address them. Accordingly, for the examples given here, we have installed lightning arresters and animal guards on our circuits.

Ultimately, time and environmental factors affect the condition of our system. As a result, systematic maintenance, overhaul, or replacement of our facilities and equipment is required. Best practices, both in the utility industry and in other industries, indicate that maintenance, overhaul, or replacement should be based not on age but on equipment condition as determined by inspection or testing. We use a variety of testing methods to determine equipment condition, including infrared thermography (to test for hot spots), systematic inspection of wood poles (checking for evidence of decay of the poles), and chemical testing (for dissolved gases in insulating oil in our station transformers).

We are implementing this approach to maintenance for our existing transmission and distribution facilities to ensure that our major electrical components operate as designed. To accomplish this goal, we are developing procedures for performing routine preventive maintenance at appropriate intervals. This method of maintenance is called "reliability centered maintenance" (RCM). Along with Consolidated Edison of New York and Texas Utilities, we are leading the industry in this maintenance methodology.

While our transition to RCM techniques is currently underway, we are continuing in the interim to maintain our equipment under a traditional maintenance program that is typical in the industry. Once we have completed our basic RCM analysis and implementation, we will be able to use the "Living RCM" process. In this process, all significant maintenance-related events (i.e., situations in which a device does not fulfill its intended function) will be added to the database of knowledge and treated as potential opportunities to refine, and therefore to improve, our ability to predict and prevent repeat failures.

To manage our maintenance program, we use a computerized maintenance management system. This system monitors and keeps information on the maintenance of each piece of equipment. It also schedules the performance of maintenance tasks and produces accompanying work orders.

Capacity Planning

Another design criterion for our system is its capacity to deliver power to customers reliably. Our system has sufficient capacity, and we plan carefully so that it continues to have it. Our planners aim to ensure that our system capacity can meet projected needs with required voltage levels, can respond adequately to interruptions, and can maintain system stability.

To accomplish these goals, we regularly assess the peak loading of, or maximum amount of power on, our facilities. We also model various parts of our system to project load in coming years. Our modeling considers a variety of factors, including current trends in area peak load growth, demographic and economic forecasts, and indicators of population, household, and employment growth in the area.

Thus, for distribution planning, we might develop a model for a growing suburb to determine whether the area needs reinforcement (e.g., an upgraded or new circuit) or some other measure (e.g., the switching of certain customers from a well-loaded distribution circuit to a more lightly-loaded one).

We model our transmission system electronically, and continuously test the model to ensure compliance with North American Electric Reliability Council (NERC) Planning Standards. These standards require that the system be planned, designed, and constructed such that it can withstand a variety of disturbances without experiencing overload of transmission elements, cascading (domino effect) outages, or uncontrolled loss of load. Compliance with NERC Planning Standards is reported to and monitored by the Mid-America Interconnected Network (MAIN), which is the regional reliability entity of which ComEd is a member.

In addition to the NERC standards, we adhere to our own planning criteria, which are even more stringent than the NERC standards. These criteria are filed annually with the Federal Energy Regulatory Commission (FERC) as part of our FERC Form 715 filing. To ensure compliance with our planning criteria and the NERC standards, we subject the computer model of our system to a variety of possible events at various projected system load levels for several years into the future. The model must maintain all transmission loads within applicable limits for each tested scenario. If this analysis identifies a system component that cannot be maintained within its operating limits in future years, we plan reinforcement to mitigate the problem.

Our system also is studied in conjunction with other utility companies in MAIN to ensure that regional import capabilities are adequate to meet the expected needs for the MAIN region in the upcoming summer peak season. This study calculates import capabilities for all single transmission contingencies (adverse situations) for several expected possible generation scenarios. The results of this study are reported to NERC as MAIN's contribution to the NERC Reliability Assessment Subcommittee report, which is issued annually by NERC.

Our transmission planners identify and propose projects over a ten-year horizon, while our distribution planners identify and propose projects over a five-year horizon.

Section 411.120 (b)(3)(G)(ii): *"A summary of the jurisdictional entity's interruptions and voltage variances reportable under this Part, including the reliability indices for the annual reporting period."*

ii. Summary of Interruptions and Voltage Variances

Under the Commission's Reliability Rules, an interruption, with certain exceptions and conditions, is "the failure or operation of a single component, or the simultaneous failure or operation of physically and directly connected components of a jurisdictional entity's transmission or distribution system that results in electric service to one or more of its customers being lost or being provided at less than fifty percent of standard voltage for a period longer than one minute in duration and requiring human intervention by the jurisdictional entity to restore electric service." (83 Illinois Administrative Code 411.20). Interruptions can arise from a wide variety of causes. Common causes of interruptions on our system include:

- vegetation (e.g., trees, undergrowth);
- weather (e.g., lightning, wind, ice);
- wildlife (e.g., squirrels, birds, raccoons);

- equipment malfunctions (e.g., underground cable faults); and
- accidents (e.g., contractor dig-ins, vehicles colliding with poles).

We are required under the Reliability Rules to report on interruptions in a variety of ways, including:

- the number and duration of planned and unplanned interruptions for the annual reporting period and their impacts on customers (*see* Section C of this Part for report);
- the number and causes of controllable interruptions for the annual reporting period (*see* Section D of this Part for report);
- customer service interruptions that were due solely to the actions or inactions of another utility, another jurisdictional entity, independent system operator, or alternative retail electric supplier for the annual reporting period (*see* Section E of this Part for report);
- our achieved level of each of three reliability indices in each of our operating areas for the annual reporting period (*see* Section H of this Part for report); and
- all interruptions that affected 10 or more customers (*see* Section b.1 of Part II and Appendix for report).

Table 9 below provides, on system and individual operating area levels, a summary of the interruptions reportable under the Reliability Rules.

Table 9: Summary of Interruptions (1998)

Operating area	Number of Interruptions
Chicago	4,913
Northeast	15,983
Southern	13,398
Northwest	11,995
System Total	46,289

With respect to voltage variations, the Reliability Rules require us to report on power fluctuations that affected 30,000 or more customers. We had no such power fluctuations during 1998.

Section 411.120 (b)(3)(G)(iii): *"The jurisdictional entity's expenditures for transmission construction and maintenance for the annual reporting period expressed in constant 1998 dollars, the ratio of those expenditures to the jurisdictional entity's transmission investment, and the average remaining depreciation lives of the entity's transmission facilities, expressed as a percentage of total depreciation lives."*

iii. Expenditures for Transmission Construction and Maintenance

In this subsection, we present information about our transmission construction and maintenance expenditures for 1998. Table 10 below lists those expenditures, the book value of transmission assets at year-end, and the accumulated depreciation (the value of the plant already depreciated) for 1998. With these values, a ratio of the construction and maintenance expenditures to the book value of our transmission assets is determined.

Furthermore, the table displays the average remaining depreciation life of the transmission facilities expressed as a percentage of the total depreciation life (the ratio of the undepreciated Plant in Service Balance to the Plant in Service Year-End Balance).

Table 10: Transmission Expenditures (millions of $)

	1998
Construction and Maintenance Expenditures	$ 163.1
Plant in Service Year End (investment at book value)	$ 2,763.1
Accumulated Provision for Depreciation (dollars already depreciated at book value)	$ 1,022.9
Undepreciated Plant in Service Balance (Row 2 minus Row 3)	$ 1,740.2
Ratio of Construction & Maintenance to Plant in Service	5.9%
Average Remaining Depreciation Lives	63.0%

Section 411.120 (b)(3)(G)(iv): *"The jurisdictional entity's expenditures for distribution construction and maintenance for the annual reporting period expressed in constant 1998 dollars, the ratio of those expenditures to the jurisdictional entity's distribution investment, and the average remaining depreciation lives of the entity's distribution facilities, expressed as a percentage of total depreciation lives."*

iv. Expenditures for Distribution Construction and Maintenance

In this subsection, we present information about our distribution construction and maintenance expenditures for 1998. Table 11 below lists those expenditures, the book value of distribution assets at year-end, and the accumulated depreciation (the value of the plant already depreciated) for 1998. With these values, a ratio of the construction and maintenance expenditures to the book value of our distribution assets is determined.

Furthermore, the table displays the average remaining depreciation life of the distribution facilities expressed as a percentage of the total depreciation life (the ratio of the undepreciated Plant in Service Balance to the Plant in Service Year-End Balance).

Table 11: Distribution Expenditures (millions of $)

	1998
Construction and Maintenance Expenditures	$ 423.8
Plant in Service Year End (investment at book value)	$ 6,136.1
Accumulated Provision for Depreciation (dollars already depreciated at book value)	$ 3,059.5
Undepreciated Plant in Service Balance (Row 2 minus Row 3)	$ 3,076.6
Ratio of Construction & Maintenance to Plant in Service	6.9%
Average Remaining Depreciation Lives	50.1%

***Section 411.120 (b)(3)(G)(v)**: "The results of a customer satisfaction survey completed during the annual reporting period and covering reliability, customer service, and customer understanding of the jurisdictional entity's services and prices."*

v. Results of Customer Satisfaction Surveys

In 1998, we conducted customer satisfaction surveys to gauge the extent to which our customers were satisfied with our reliability and customer service. In these surveys, we polled samples of residential, small commercial and industrial, and large commercial and industrial customers regarding these issues.

First, we asked all of the customers about the provision of reliable electric service in the exact same manner:

> "*Using a ZERO-TO-TEN SCALE, where zero means you are extremely dissatisfied and ten means you are extremely satisfied, how would you rate ComEd on providing reliable electric service?"*

Second, we asked about customer service, using one question for our commercial and industrial customers and another question for our residential customers. The question for our commercial and industrial customers was:

> *"Using a ZERO-TO-TEN SCALE, where zero means you are extremely dissatisfied and ten means you are extremely satisfied, how would you rate ComEd on providing good customer service?"*

The question for residential customers was:

> *"Many ComEd activities, such as responding to customer telephone calls and office visits, and handling customer business such as processing bill payments, reading meters and opening and closing accounts are generally described by the phrase "customer service." Thinking about this definition of customer service and holding aside other aspects of service from ComEd such as reliability of service and electric rates, how satisfied are you with ComEd customer service on a ZERO-TO-TEN scale?"*

Our 1998 surveys did not include questions about our services and prices. We will be including such questions in our surveys in the fourth quarter of 1999, after the advent of customer choice.

Tables 12 and 13 below present the results of these surveys, showing the percentage of "positive responses" (responses from six to ten on the zero-to-ten scale). Table 12 summarizes the overall results by customer category and question. Table 13 presents greater detail on the residential surveys, first breaking down the results for each question by operating area and quarter, and then showing the sample size by operating area and quarter.

From these surveys, we have observed that our customers' satisfaction declined in the third quarter of 1998. The abnormal number of storms, in conjunction with supply challenges in the Midwest, apparently raised concerns about reliability. Although these events were outside our control, we have taken a number of actions that should increase customer satisfaction. For instance, as discussed in the Introduction to this report, we have significantly increased our budgets for investment in our transmission and distribution system and have introduced new programs to communicate information regarding interruptions. Customer satisfaction levels began to recover in the fourth quarter.

Table 12: Customer Satisfaction Survey Results for 1998
(Percent Positive Response)

	1998 Average
Residential	
Providing Reliable Electric Service	80
Satisfaction with Customer Service	74
Small Commercial & Industrial	
Providing Reliable Electric Service	72
Providing Good Customer Service	60
Large Commercial & Industrial	
Providing Reliable Electric Service	65
Providing Good Customer Service	66

Table 13: Residential Customer Survey Results by Quarter
(Percent Positive Response)

	1998			
	Q1	Q2	Q3	Q4
Providing Reliable Electric Service				
Chicago	86	87	71	78
Northeast	85	82	63	73
Southern	87	87	71	80
Northwest	87	88	75	82
Satisfaction with Customer Service				
Chicago	77	77	66	69
Northeast	81	74	60	69
Southern	75	84	72	73
Northwest	76	73	75	76
Sample Size				
Chicago	302	302	301	302
Northeast	132	148	156	161
Southern	179	156	167	167
Northwest	289	294	276	270

Section 411.120 (b)(3)(G)(vi): *"An overview pertaining to the number and substance of customers' reliability complaints for the annual reporting period and their distribution over the jurisdictional entity's operating areas."*

vi. Overview of Customers' Reliability Complaints

In this subsection, we provide an overview of the number and substance of customer complaints relating to the reliability of our system for 1998. These complaints fall into various areas, including:

Interruption Complaints
These complaints concern both sustained interruptions (one minute or longer) and momentary interruptions (less than one minute). The causes of sustained interruptions and our various methods for addressing them are discussed throughout this report, particularly in subsections i and ii of this Section, Sections A, C, D, and J of this Part, and Section b.1 of Part II. The primary causes of momentary interruptions are lightning and momentary contact of tree limbs and foreign objects (e.g., metal foil balloons) with our distribution facilities. Normally, we are able to correct frequent momentary interruptions with spot tree trimming, and in certain circumstances, with relocation or repair of Company or third-party facilities.

Voltage Complaints
These complaints typically concern situations of low voltage (e.g., dimming of lights), high voltage (e.g., a surge that affects customer electrical equipment), or phase imbalance for larger loads. These situations arise from a variety of causes, including malfunction of transformers, loose circuit connections, incorrect settings of transformers and voltage regulators, the need for more or fewer line or station capacitors, and balanced line loading. These problems may be on ComEd's system or in the customer's building or equipment.

Generally, we investigate and offer solutions for the specific cause of the situation. Thus, for the causes just listed, we might replace the transformers, tighten the connections, repair and/or adjust settings of transformers and regulators, remove or add line or station capacitors, move customers from one circuit to another, or ask customers to make the appropriate repairs.

Table 14 below presents the number of complaints received in these areas for 1998 on system and individual operating area levels.

Table 14: Overview of Customers' Reliability Complaints – 1998

Nature of Complaint	Chicago	Northeast	Southern	Northwest	System Total
Sustained Interruptions	923	3,633	937	407	5,900
Momentary Interruptions	393	504	317	56	1,270
Low Voltage	143	164	110	34	451
High Voltage	41	93	18	17	169
Totals	1,500	4,394	1,382	514	7,790

Section 411.120 (b)(3)(G)(vii): *"The corresponding information, in the same format, for the previous three annual reporting periods, if available."*

vii. Corresponding Information for Previous Annual Reporting Periods

This subsection requires us to report the corresponding information, in the same format, for the previous three annual reporting periods, if available. Because this is the first annual report that we have filed under the Commission's Reliability Rules, there is no previous annual reporting period. We will, however, present the information in this Section of this report as corresponding information in our annual reliability report next year.

Section 411.120 (b)(3)(H): *"A table showing the achieved level of each of the three reliability indices of each operating area for the annual reporting period (provided, however, that for any reporting period commencing before April 1, 1998, a jurisdictional entity will not be required to report the CAIFI reliability index)."*

H. Table of Reliability Indices

Table 15 below presents our 1998 statistical performance, for system and individual operating area levels, on three indices concerning interruptions:

- CAIDI, or Customer Average Interruption Duration Index, which shows the average interruption duration for those customers who were interrupted during the year, and which is calculated according to the following formula:

$$\text{CAIDI} = \frac{\text{sum of all customer interruption durations}}{\text{total number of customer interruptions}}$$

- CAIFI, or Customer Average Interruption Frequency Index, which shows the average number of interruptions that were experienced by customers who experienced at least one interruption during the year, and which is calculated according to the following formula:

$$\text{CAIFI} = \frac{\text{total number of customer interruptions}}{\text{total number of customers affected}}$$

- SAIFI, or System Average Interruption Frequency Index, which shows the average number of interruptions experienced by all customers on the system during the year, and which is calculated according to the following formula:

$$\text{SAIFI} = \frac{\text{total number of customer interruptions}}{\text{total number of customers served}}$$

While these indices do offer information, it is important to note that they include not only controllable interruptions, but also uncontrollable interruptions. Thus, a particular score on one of these indices may be due in large part to uncontrollable interruptions – that is, interruptions that bear no relation to the underlying reliability of our system. This point is particularly important for a year like 1998, in which we experienced an abnormally high number of severe storms.

It also is important to note that special care must be taken when comparing statistics from one utility to another. If comparing statistics among utilities in the same state, analysis should include, among other things, the weather experienced by each utility, the type of load they serve (whether urban, suburban, or rural), and the type of reporting they do (whether load-based or customer-based).

Even more care should be taken when comparing statistics of utilities from different states. Although the acronyms of the statistics are often the same (e.g., SAIFI, CAIDI), state public utility commissions (or sometimes utilities themselves) may set different parameters for the types of interruptions that are to be used in calculating such statistics. The Illinois Commerce Commission, for example, requires that interruptions that last more than one minute be included in the calculations, while other state commissions require only interruptions that last more than five minutes. Likewise, Illinois utilities must include almost every interruption that occurred on their systems, while other states allow utilities to remove any interruptions caused by severe storms before making the calculations.

Table 15: Reliability Indices for 1998

	Chicago	Northeast	Southern	Northwest	System
CAIDI (Minutes)	355	249	305	162	274
CAIFI (Number of Interruptions)	2.09	2.97	2.75	2.45	2.63
SAIFI (Number of Interruptions)	1.63	2.70	2.46	2.04	2.20

Section 411.120 (b)(3)(I): *"A list showing the worst-performing circuits for each operating area for the annual reporting period with the understanding that the designation of circuits as "worst-performing circuits" shall not, in and of itself, indicate a violation of this Part."*

I. List of Worst-Performing Circuits

In Tables 16 through 19 below, we identify, for each of our operating areas during 1998, the distribution circuits with the lowest performance (highest scores) for each of the three reliability indices discussed in Section H of this Part (i.e., CAIDI, CAIFI, and SAIFI). For these purposes, the "lowest performance" is defined as the lowest 1%.

When reviewing these tables, it is important to note the limitations of the statistics (which are discussed in Section H of this Part). It also is important to note that even though a specific circuit may be listed in these tables, it may not need extensive refurbishment or replacement. For instance, Chicago circuit SCHG55 has historically performed well. The March 1998 ice storm, however, caused trees and limbs to fall, resulting in an extended interruption on that circuit. That extended outage alone caused the duration statistic, CAIDI, to be quite high for 1998. Yet once the fallen trees were removed and the circuit was repaired, the circuit continued to perform well throughout the rest of the year.

Whatever these circuits' individual histories, we assess each of them to determine ways to improve performance. We discuss ComEd's efforts in these regards in Section J of this Part.

Table 16: Worst-Performing Circuits in 1998 - Chicago

Circuit	CAIDI (Minutes)	Circuit	CAIFI (Avg. Interruptions)	Circuit	SAIFI (Avg. Interruptions)
28TH245	4,654	Z15082	6.87	Z15082	6.87
638X51	4,597	Z15090	6.73	Z15090	6.73
G825	3,470	Z3340	5.25	Z3340	5.25
Z5542	3,308	Z11872	5.25	Z11872	5.25
EXCH041	2,958	Z84040	5.07	Z84040	5.07
Z4349	2,920	Z30741	4.82	Z30741	4.82
SCHG55	2,892	Z1409	4.69	Z1409	4.69
119T241	2,786	Z15077	4.59	Z15077	4.59
SCHG351	2,731	D5014	4.47	D5014	4.47
314Y347	2,721	Z17441	4.43	Z17441	4.43
365Y149	2,573	Z1951	4.43	Z1951	4.43
X5436	2,521	X5384	4.35	X5384	4.35
X5358	2,499	X5385	4.28	X5385	4.28
304X046	2,466	Y8233Y	4.13	Y8233Y	4.13
D5003	2,405	Z15054	4.10	Z15054	4.10
Z13793	2,397	119T142	4.09	119T142	4.09
038Y241	2,397	TROY53	4.07	TROY53	4.07
62ND32	2,303	310Y348	4.05	310Y348	4.05
315X241	2,292	Z3332	4.04	Z3332	4.04

Table 17: Worst-Performing Circuits in 1998 - Northeast

Circuit	CAIDI (Minutes)	Circuit	CAIFI (Avg. Interruptions)	Circuit	SAIFI (Avg. Interruptions)
D403	4,905	E021	7.76	E021	7.76
C42	3,989	E5221X	6.86	E5221X	6.86
C623	3,139	C1217	6.74	C1217	6.74
C75	2,800	W2012	6.57	W2012	6.57
C525	2,570	C1313Y	6.55	C1313Y	6.55
C955	2,411	E6820	6.27	E6820	6.27
E395	2,390	E0725	6.27	E0725	6.27
C252	2,304	D46	6.16	D46	6.16
C657	2,223	W577Y	5.90	W577Y	5.90
C9818	2,095	W314	5.72	W314	5.72
C668	2,071	W6613	5.59	W6613	5.59
D347	2,042	A668	5.51	A668	5.51
E4813	2,039	E5213X	5.46	E5213X	5.46
D54	1,984	D16	5.45	D16	5.45
C773	1,840	E6026	5.42	E6026	5.42
C7215	1,815	W5202	5.39	W5202	5.39
A4210	1,791	W689	5.33	W689	5.33

Table 18: Worst-Performing Circuits in 1998 - Southern

Circuit	CAIDI (Minutes)	Circuit	CAIFI (Avg. Interruptions)	Circuit	SAIFI (Avg. Interruptions)
G306	3,783	F4681	6.41	F4681	6.41
G252	3,695	G612	6.31	G612	6.31
F225	3,535	G6172	6.07	G6172	6.07
G214	3,186	G4373	5.79	G4373	5.79
F463	3,007	W3613	5.17	W3613	5.17
F227	2,955	G146	5.05	G146	5.05
F917	2,927	D3413	4.80	D3413	4.80
G5873	2,691	J1678	4.68	J1678	4.68

Table 19: Worst-Performing Circuits in 1998 - Northwest

Circuit	CAIDI (Minutes)	Circuit	CAIFI (Avg. Interruptions)	Circuit	SAIFI (Avg. Interruptions)
R6374NO2	1,848	W6311	4.82	W6311	4.82
R6514	1,538	W3114	4.37	W3114	4.37
B455	1,463	W631	3.87	W631	3.78
R6505AN4	1,162	W7218	3.75	W7218	3.75
B236	1,053	R6402	3.74	R6402	3.74
B501	962	B865	3.48	B865	3.48
B217	944	R8009	3.41	R8009	3.41

Section 411.120 (b)(3)(J): *"A statement of the operating and maintenance history of circuits designated as worst-performing circuits; a description of any action taken or planned to improve the performance of any such circuit (which shall include information concerning the cost of such action); and a schedule for completion of any such action. (The jurisdictional entity may decide, based on cost considerations or other factors, that it should take no action to improve the performance of one or more circuits designated as worst-performing circuits. If the jurisdictional entity decides to take no action to improve the performance of one or more circuits designated as worst-performing circuits, the jurisdictional entity shall explain its decision in its annual report.)"*

J. Analysis and Planned Improvements for Worst-Performing Circuits

As we noted in Section I of this Part, we analyze the circuits in each of our operating areas with the lowest performance on three reliability indices to identify ways to improve performance. Once we have completed our analysis, we issue work orders where appropriate, and then perform the work. Work can include a variety of actions, such as trimming trees to help prevent tree contact and installing lightning arresters to help prevent our equipment from being damaged by lightning. It also can include various corrective maintenance measures, such as replacement of crossarms and damaged conductors.

In the list below, we discuss, by operating area, information regarding the analysis and planned improvements for the circuits identified in Section I. We present information about the operating and maintenance history of each circuit, including information on the circuit's interruptions in 1998, the date of our last maintenance inspection of the circuit, and the date of our last tree trimming on the circuit. In addition, we describe the work that we have planned for improving performance on these circuits, and note the estimated costs of performing that work. Work noted in the list below is in process and will be completed throughout 1999.

It should be noted that the number of customers listed for each interruption identified in the list below reflects only those customers who were normally connected to the circuit. ComEd sometimes switches customers to circuits other than the ones to which they are normally connected in order to repair or replace equipment, or to accommodate changes on the system. Thus, if two or more circuits have been tied, a single interruption affects more than just the circuit's normally connected customers. (In contrast, each of the interruptions included in the Appendix reflects the total number of customers affected by the interruption, regardless of whether they are normally connected to the interrupted circuit.)

WORST 1% OF CHICAGO OPERATING AREA CIRCUITS AS MEASURED BY THE CAIDI INDEX

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
28TH245					02/23/1999	11/12/1995
	03/09/1998	325	4654	limb broken - primary		
	Work Description					
	Trimming of trees. Corrective maintenance per circuit inspection.					
	Estimated cost of work:	$7,500				
638X51					02/01/1998	11/09/1994
	06/30/1998	1634	4683	lightning		
	10/01/1998	16	121	unknown		
	10/02/1998	16	328	unknown		
	Work Description					
	No additional work required. When the circuit was converted from 4kV to 12kV in December 1998, corrective actions taken included installation of additional lightning arresters, replacement of wires, replacement of fuses, trimming of trees, and installation of additional wildlife protection.					
	Cost of work:	$350,000				
G825					03/01/1999	11/18/1995
	03/09/1998	52	3470	wind		
	Work Description					
	Installation of additional lightning arresters. Trimming of trees. Corrective maintenance per circuit nspection.					
	Estimated cost of work:	$15,000				
Z5542					02/25/1999	05/15/1993
	03/09/1998	299	3405	ice		
	07/19/1998	14	1235	lightning		
	Work Description					
	Corrective maintenance per circuit inspection. Removal of overhead wire slack.					
	Estimated cost of work:	$10,000				
EXCH041					02/23/1999	05/31/1997
	03/09/1998	226	2958	limb broken - primary		
	Work Description					
	Trimming of trees. Corrective maintenance per circuit inspection.					
	Estimated cost of work:	$5,000				
Z4349					02/22/1999	10/03/1998
	08/24/1998	7	2920	tree contact - primary		
	Work Description					
	Trimming of trees. Corrective maintenance per circuit inspection. Removal of overhead wire slack.					
	Estimated cost of work:	$15,000				
SCHG55					02/18/1999	04/04/1998
	03/09/1998	63	2892	ice		
	Work Description					
	Trimming of trees. Corrective maintenance per circuit inspection.					
	Estimated cost of work:	$10,000				

WORST 1% OF CHICAGO OPERATING AREA CIRCUITS AS MEASURED BY THE CAIDI INDEX (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
119T241					02/17/1999	07/06/1996
	08/24/1998	161	2786	limb broken - primary		
	Work Description					
	Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses.					
	Estimated cost of work:	$5,000				
SCHG351					02/18/1999	10/21/1995
	08/24/1998	83	2731	tree contact - primary		
	Work Description					
	Trimming of trees. Corrective maintenance per circuit inspection.					
	Estimated cost of work:	$2,500				
314Y347					02/08/1999	04/29/1994
	08/24/1998	1	2721	limb broken - primary		
	Work Description					
	Trimming of trees. Corrective maintenance per circuit inspection.					
	Estimated cost of work:	$5,000				
365Y149					02/08/1999	07/04/1998
	03/09/1998	113	2573	ice		
	Work Description					
	Corrective maintenance per circuit inspection. Removal of overhead wire slack.					
	Estimated cost of work:	$10,000				
X5436					05/14/1999	11/04/1995
	03/08/1998	56	2521	wind		
	Work Description					
	Corrective maintenance per circuit inspection. Removal of overhead wire slack. Inspection of circuit for proper grounding.					
	Estimated cost of work:	$5,000				
X5358					02/10/1999	03/07/1998
	03/09/1998	753	3043	flooding/rain		
	08/25/1998	184	275	lightning		
	Work Description					
	Installation of additional lightning arresters. Corrective maintenance per circuit inspection. Removal of overhead wire slack.					
	Estimated cost of work:	$20,000				
304X046					02/09/1999	01/17/1998
	03/09/1998	534	2466	ice		
	Work Description					
	Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Replacement of overhead tap wires.					
	Estimated cost of work:	$13,000				

WORST 1% OF CHICAGO OPERATING AREA CIRCUITS AS MEASURED BY THE CAIDI INDEX (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
D5003					05/14/1999	03/18/1995
	03/09/1998	676	2415	ice		
	09/08/1998	3	1011	unknown		
	12/03/1998	1	114	other		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Corrective maintenance per circuit inspection.					
	Estimated cost of work:	$10,000				
Z13793					02/26/1999	12/09/1995
	03/09/1998	677	2465	tree contact - primary		
	07/19/1998	1	582	unknown		
	07/19/1998	18	382	lightning		
	08/23/1998	1	156	unknown		
	08/24/1998	26	2187	limb broken - primary		
	Work Description					
	Installation of additional lightning arresters. Trimming of trees. Corrective maintenance per circuit inspection.					
	Estimated cost of work:	$30,000				
038Y241					02/08/1999	08/09/1992
	07/04/1998	2	2397	lightning		
	Work Description					
	Trimming of trees. Corrective maintenance per circuit inspection.					
	Estimated cost of work:	$5,000				
62ND32					05/14/1999	08/28/1993
	08/24/1998	195	2303	tree contact - primary		
	Work Description					
	Trimming of trees. Corrective maintenance per circuit inspection.					
	Estimated cost of work:	$25,000				
315X241					05/14/1999	04/01/1998
	03/09/1998	331	2333	ice		
	03/31/1998	12	1175	unknown		
	Work Description					
	Installation of additional lightning arresters. Corrective maintenance per circuit inspection. Removal of overhead wire slack.					
	Estimated cost of work:	$10,000				

WORST 1% OF CHICAGO OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
Z15082					02/23/1999	04/05/1997
	01/01/1998	1457	426	unknown		
	03/09/1998	1457	699	ice		
	03/11/1998	20	537	limb broken - primary		
	03/27/1998	1457	62	limb broken - primary		
	04/12/1998	1457	157	tree contact - primary		
	05/24/1998	8	601	lightning		
	06/20/1998	1457	86	unknown		
	06/26/1998	181	391	lightning		
	06/29/1998	1457	33	lightning		
	07/03/1998	20	981	tree contact - primary		
	07/05/1998	30	128	wildlife		
	07/12/1998	27	133	wildlife		
	07/19/1998	30	1245	tree contact - primary		
	07/24/1998	776	147	tree contact - primary		
	07/24/1998	129	484	tree contact - primary		
	09/07/1998	89	679	lightning		
	09/23/1998	14	152	wildlife		
	10/29/1998	122	177	tree contact - primary		
	11/07/1998	22	102	unknown		
	11/10/1998	122	1059	wind		

Work Description
Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Removal of overhead wire slack.
Estimated cost of work: $50,000

Z15090					02/18/1999	12/30/1995
	02/25/1998	1408	54	unknown		
	03/09/1998	804	455	ice		
	03/19/1998	1408	33	unknown		
	04/15/1998	1408	141	underground equipment failure		
	07/11/1998	10	230	unknown		
	08/24/1998	1408	579	limb broken - primary		
	08/26/1998	190	6	limb broken - primary		
	09/02/1998	1408	55	unknown		
	10/18/1998	18	994	unknown		
	10/29/1998	1408	67	dig-in by others		

Work Description
Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection.
Estimated cost of work: $25,000

WORST 1% OF CHICAGO OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
Z3340					02/11/1999	10/24/1993
	01/07/1998	1111	37	underground equipment failure		
	02/15/1998	1111	174	unknown		
	03/09/1998	1111	282	ice		
	07/19/1998	30	134	tree contact - primary		
	07/19/1998	52	1213	tree contact - primary		
	07/28/1998	70	75	tree contact - primary		
	08/04/1998	1111	207	lightning		
	11/10/1998	1111	105	wind		
	12/06/1998	15	696	other		
	12/18/1998	114	89	unknown		

Work Description
Installation of additional lightning arresters. Trimming of trees. Corrective maintenance per circuit inspection. Removal of overhead wire slack.
Estimated cost of work: $32,500

Z11872					03/01/1999	05/06/1995
	01/16/1998	51	370	other		
	03/09/1998	2601	761	ice		
	03/09/1998	976	1729	ice		
	03/13/1998	612	87	ice		
	03/13/1998	1317	289	limb broken - primary		
	03/16/1998	19	440	wind		
	06/26/1998	48	210	wind		
	06/27/1998	49	296	unknown		
	07/19/1998	38	486	tree contact - primary		
	07/21/1998	41	155	unknown		
	08/24/1998	1852	321	limb broken - primary		
	08/25/1998	2601	48	tree contact - primary		
	08/30/1998	112	90	limb broken - primary		
	09/30/1998	237	113	lightning		
	10/18/1998	190	179	tree contact - primary		
	11/10/1998	26	288	wind		
	11/10/1998	2601	893	wind		
	11/11/1998	39	562	wind		
	11/18/1998	233	131	tree contact - primary		

Work Description
Installation of additional lightning arresters. Trimming of trees. Corrective maintenance per circuit inspection. Removal of overhead wire slack.
Estimated cost of work: $50,000

WORST 1% OF CHICAGO OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
Z84040					02/22/1999	11/16/1996
	03/09/1998	4260	2195	ice		
	03/14/1998	64	330	unknown		
	03/20/1998	28	204	wind		
	03/20/1998	4260	28	tree contact - primary		
	03/20/1998	4260	158	wind		
	03/26/1998	44	154	wind		
	04/20/1998	144	152	overhead equipment malfunction		
	08/24/1998	7	2927	limb broken - primary		
	09/07/1998	4260	488	unknown		
	11/06/1998	78	72	unknown		
	11/10/1998	4260	1108	wind		
	Work Description					
	Installation of additional lightning arresters. Trimming of trees. Corrective maintenance per circuit inspection. Removal of overhead wire slack. Estimated cost of work: $35,000					
Z30741					02/15/1999	06/17/1995
	02/06/1998	14	140	wildlife		
	02/10/1998	1878	71	unknown		
	02/11/1998	1878	77	flooding/rain		
	03/09/1998	1878	541	ice		
	03/10/1998	33	764	ice		
	07/19/1998	41	1640	lightning		
	07/28/1998	30	109	unknown		
	08/10/1998	29	72	lightning		
	08/24/1998	1351	511	lightning		
	09/26/1998	14	130	other		
	10/25/1998	20	176	wildlife		
	10/30/1998	16	84	unknown		
	11/10/1998	1878	476	limb broken - primary		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Removal of overhead wire slack. Estimated cost of work: $50,000					
Z1409					05/14/1999	10/21/1995
	03/09/1998	1632	463	ice		
	03/09/1998	1632	77	ice		
	03/11/1998	13	73	ice		
	06/26/1998	1632	268	lightning		
	07/19/1998	46	856	lightning		
	08/24/1998	895	1256	wind		
	10/29/1998	167	84	other		
	12/17/1998	1632	29	unknown		
	Work Description					
	Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Estimated cost of work: $10,000					

WORST 1% OF CHICAGO OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
Z15077					02/24/1999	08/19/1995
	01/01/1998	635	89	other		
	02/26/1998	44	81	unknown		
	03/09/1998	635	275	ice		
	04/01/1998	635	70	wind		
	06/18/1998	47	96	lightning		
	08/01/1998	635	285	wildlife		
	08/24/1998	1	214	tree contact - primary		
	09/07/1998	92	558	lightning		
	09/07/1998	96	532	lightning		
	11/10/1998	92	1440	tree contact - primary		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection.					
	Estimated cost of work: $25,000					
D5014					02/19/1999	12/28/1996
	05/27/1998	1773	109	unknown		
	05/27/1998	74	66	tree contact - primary		
	05/28/1998	1773	183	other		
	07/19/1998	1	576	lightning		
	07/19/1998	117	1131	lightning		
	08/04/1998	1773	72	lightning		
	11/10/1998	1773	349	wind		
	11/11/1998	1773	209	lightning		
	Work Description					
	Installation of additional lightning arresters. Trimming of trees. Corrective maintenance per circuit inspection.					
	Estimated cost of work: $37,500					
Z17441					05/14/1999	11/29/1997
	02/08/1998	2	73	wildlife		
	04/15/1998	2059	152	underground equipment failure		
	05/13/1998	2059	183	dig-in by others		
	07/03/1998	23	1121	lightning		
	07/04/1998	7	134	unknown		
	08/20/1998	386	28	intentional - emergency repairs		
	09/20/1998	203	668	flooding/rain		
	09/25/1998	1	457	unknown		
	10/29/1998	136	128	lightning		
	12/06/1998	2059	141	unknown		
	12/07/1998	128	706	unknown		
	12/12/1998	2059	135	unknown		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Corrective maintenance per circuit inspection.					
	Estimated cost of work: $25,000					

WORST 1% OF CHICAGO OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
Z1951					02/15/1999	04/03/1993
	01/07/1998	1413	128	flooding/rain		
	01/09/1998	1413	81	unknown		
	03/09/1998	556	3133	wind		
	07/19/1998	1413	54	lightning		
	07/19/1998	1413	942	lightning		
	10/03/1998	48	293	limb broken - primary		
	Work Description					
	Installation of additional lightning arresters. Trimming of trees. Corrective maintenance per circuit inspection.					
	Estimated cost of work: $25,000					
X5384					02/09/1999	05/05/1993
	03/09/1998	601	409	ice		
	05/24/1998	2772	42	intentional - emergency repairs		
	06/06/1998	140	83	unknown		
	06/25/1998	145	675	lightning		
	07/21/1998	90	566	unknown		
	08/05/1998	2772	89	unknown		
	10/06/1998	2772	88	dig-in by others		
	11/10/1998	2772	1495	tree contact - primary		
	Work Description					
	Installation of additional lightning arresters. Trimming of trees. Corrective maintenance per circuit inspection.					
	Estimated cost of work: $54,000					
X5385					05/14/1999	04/08/1993
	03/28/1998	219	117	unknown		
	04/27/1998	1019	29	unknown		
	06/13/1998	42	266	wildlife		
	06/24/1998	1019	103	underground equipment failure		
	08/22/1998	148	50	unknown		
	09/08/1998	1019	22	other		
	11/06/1998	1019	36	unknown		
	12/18/1998	1019	24	unknown		
	Work Description					
	Corrective maintenance per circuit inspection. Inspection of circuit grounding for proper resistance.					
	Estimated cost of work: $5,000					
Y8233Y					02/08/1999	09/09/1994
	04/14/1998	31	31	dig-in by others		
	05/12/1998	31	107	other		
	05/20/1998	6	128	other		
	08/24/1998	31	113	lightning		
	11/23/1998	31	53	wind		
	Work Description					
	Installation of additional lightning arresters. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses.					
	Estimated cost of work: $42,500					

WORST 1% OF CHICAGO OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
Z15054					02/26/1999	06/27/1998
	03/09/1998	3558	74	ice		
	03/09/1998	3558	1443	ice		
	04/02/1998	10	81	accident by others		
	05/29/1998	53	171	wildlife		
	06/06/1998	75	90	wildlife		
	06/07/1998	24	67	wildlife		
	06/26/1998	160	63	unknown		
	08/14/1998	49	129	tree contact - primary		
	09/08/1998	3558	70	unknown		
	10/06/1998	3558	285	flooding/rain		
	11/07/1998	24	81	wildlife		
	Work Description					
	Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Removal of overhead wire slack.					
	Estimated cost of work:	$16,000				
119T142					05/14/1999	11/18/1995
	03/16/1998	718	90	vehicles		
	06/24/1998	717	78	unknown		
	07/20/1998	20	372	lightning		
	08/07/1998	27	1366	unknown		
	08/24/1998	718	868	tree contact - primary		
	08/25/1998	718	1112	limb broken - primary		
	10/29/1998	20	540	other		
	Work Description					
	Installation of additional lightning arresters. Trimming of trees. Corrective maintenance per circuit inspection.					
	Estimated cost of work:	$30,000				
TROY53					03/01/1998	11/16/1996
	03/09/1998	152	3171	wind		
	08/10/1998	113	168	other		
	10/03/1998	101	29	unknown		
	10/04/1998	152	241	underground equipment failure		
	11/02/1998	100	59	unknown		
	Work Description					
	Work is in progress. 75% of the circuit was converted from 4kV to 12kV in 1998. Actions taken during conversion included upgrades of lightning arresters, replacement of lines, trimming of trees, installation of additional wildlife protection, and upgrades of sectionalizing fuses.					
	Estimated cost of work:	$100,000				

WORST 1% OF CHICAGO OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
310Y348					05/14/1999	05/11/1995
	03/09/1998	501	992	ice / snow		
	03/10/1998	731	1709	ice / snow		
	03/26/1998	731	1389	wind		
	08/26/1998	67	77	unknown		
	11/10/1998	160	173	tree contact - primary		
	11/10/1998	731	951	tree contact - primary		
	12/20/1998	40	221	foreign object		
	Work Description					
	Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Replacement of lines.					
	Estimated cost of work:	$25,000				
Z3332					05/14/1999	01/08/1995
	02/03/1998	27	79	wildlife		
	03/09/1998	2218	512	ice		
	03/13/1998	2218	94	ice		
	05/05/1998	2218	70	accident by others		
	07/19/1998	2218	73	lightning		
	10/30/1998	69	37	wildlife		
	Work Description					
	Corrective maintenance per circuit inspection. Installation of sectionalizing fuses and fault indicators.					
	Estimated cost of work:	$8,000				

WORST 1% OF NORTHEAST OPERATING AREA CIRCUITS AS MEASURED BY THE CAIDI INDEX

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
D403					03/01/1999	11/11/1995
	07/19/1998	470	4905	tree contact - primary		
	Work Description					
	Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.					
	Estimated cost of work:	$5,000				
C42					03/19/1999	09/02/1995
	11/10/1998	25	3989	wind		
	Work Description					
	Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.					
	Estimated cost of work:	$5,000				
C623					03/25/1999	03/07/1998
	11/10/1998	66	3139	wind		
	Work Description					
	Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Removal of overhead wire slack.					
	Estimated cost of work:	$25,000				
C75					03/18/1999	07/29/1995
	11/11/1998	12	2800	wind		
	Work Description					
	Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses.					
	Estimated cost of work:	$65,000				
C525					03/01/1999	05/23/1992
	11/11/1998	5	2570	limb broken - primary		
	Work Description					
	Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses.					
	Estimated cost of work:	$35,000				
C955					03/25/1999	10/24/1992
	11/11/1998	29	2411	wind		
	Work Description					
	Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses.					
	Estimated cost of work:	$30,000				
E395					03/01/1999	02/07/1998
	05/17/1998	16	360	wildlife		
	11/10/1998	225	2534	wind		
	Work Description					
	Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Removal of overhead wire slack.					
	Estimated cost of work:	$13,000				

WORST 1% OF NORTHEAST OPERATING AREA CIRCUITS AS MEASURED BY THE CAIDI INDEX (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
C252					03/24/1999	09/20/1997
	09/24/1998	11	705	underground equipment failure		
	09/27/1998	11	396	underground equipment failure		
	11/10/1998	61	2936	wind		
	Work Description					
	Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.					
	Estimated cost of work:		$44,000			
C657					05/15/1999	02/03/1996
	03/09/1998	149	2223	ice		
	Work Description					
	Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Replacement of line.					
	Estimated cost of work:		$10,000			
C9818					03/07/1999	03/22/1997
	03/09/1998	66	2334	ice		
	05/18/1998	8	125	other		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection.					
	Estimated cost of work:		$27,000			
C668					03/11/1999	05/04/1996
	03/09/1998	263	2071	ice		
	Work Description					
	Trimming of trees. Corrective maintenance per circuit inspection.					
	Estimated cost of work:		$15,000			
D347					02/11/1999	04/02/1994
	03/09/1998	1055	2067	ice		
	08/04/1998	16	391	lightning		
	Work Description					
	Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses.					
	Estimated cost of work:		$25,000			
E4813					05/14/1999	06/04/1992
	06/01/1998	28	245	wildlife		
	06/09/1998	28	30	tree contact - primary		
	06/26/1998	28	674	lightning		
	09/20/1998	1	1250	underground equipment failure		
	11/10/1998	98	3030	wind		
	Work Description					
	Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.					
	Estimated cost of work:		$10,000			

WORST 1% OF NORTHEAST OPERATING AREA CIRCUITS AS MEASURED BY THE CAIDI INDEX (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
D54					02/08/1999	08/07/1993
	03/09/1998	199	2071	ice		
	03/11/1998	9	61	ice		

Work Description
Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.
Estimated cost of work: $25,000

C773					05/14/1999	12/30/1995
	11/11/1998	48	1840	limb broken - primary		

Work Description
Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.
Estimated cost of work: $10,000

C7215					05/14/1999	04/24/1993
	02/28/1998	22	10	other		
	03/09/1998	105	2827	ice		
	05/24/1998	2	69	other		
	07/09/1998	11	462	underground equipment failure		
	08/28/1998	16	53	wildlife		
	09/02/1998	15	219	other		
	11/10/1998	14	2095	wind		

Work Description
Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.
Estimated cost of work: $30,000

A4210					05/14/1999	04/01/1995
	05/09/1998	9	75	other		
	05/15/1998	35	153	tree contact - primary		
	06/11/1998	39	124	lightning		
	07/20/1998	3528	1873	underground equipment malfunction		
	07/20/1998	46	500	unknown		
	07/21/1998	1	221	tree contact - primary		
	11/10/1998	127	1079	wind		

Work Description
Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit I inspection. Installation of sectionalizing fuses.
Estimated cost of work: $40,000

WORST 1% OF NORTHEAST OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
E021					03/11/1999	03/06/1993
	01/13/1998	93	149	unknown		
	02/27/1998	2547	204	underground equipment failure		
	03/08/1998	82	176	unknown		
	03/09/1998	2547	416	unknown		
	03/09/1998	2547	114	wind		
	04/09/1998	95	162	underground equipment failure		
	05/08/1998	269	424	underground equipment failure		
	05/18/1998	1792	20	wildlife		
	05/28/1998	945	1108	wind		
	06/18/1998	33	550	limb broken - primary		
	07/10/1998	2547	42	dig-in by others		
	07/14/1998	93	684	dig-in by others		
	08/07/1998	2547	83	underground equipment failure		
	08/25/1998	14	557	lightning		
	09/07/1998	142	239	underground equipment failure		
	09/20/1998	26	286	lightning		
	09/26/1998	2547	48	underground equipment failure		
	10/12/1998	945	129	underground equipment failure		
	11/03/1998	4	67	wildlife		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Replacement of underground cable. Removal of overhead wire slack.					
	Estimated cost of work: $61,500					
E5221X					02/03/1999	08/17/1996
	01/08/1998	225	65	unknown		
	02/11/1998	2	68	underground equipment failure		
	03/26/1998	225	42	wind		
	03/26/1998	225	6	wind		
	03/26/1998	225	25	wind		
	03/26/1998	225	186	wind		
	03/27/1998	225	217	wind		
	03/29/1998	225	14	wind		
	06/07/1998	1	265	underground equipment failure		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Removal of overhead wire slack.					
	Estimated cost of work: $12,000					

WORST 1% OF NORTHEAST OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
C1217					05/14/1999	03/25/1999
	01/05/1998	19	87	underground equipment failure		
	01/23/1998	8	49	wildlife		
	04/17/1998	11	55	dig-in by others		
	05/10/1998	8	130	unknown		
	05/24/1998	1012	16	lightning		
	05/30/1998	39	79	wind		
	06/11/1998	32	2	other		
	06/12/1998	1012	141	unknown		
	06/19/1998	38	173	wind		
	06/26/1998	1012	78	tree contact - primary		
	06/26/1998	39	402	lightning		
	06/27/1998	1012	79	limb broken - primary		
	06/28/1998	34	98	lightning		
	07/03/1998	15	198	lightning		
	07/22/1998	413	90	underground equipment failure		
	07/27/1998	15	160	unknown		
	09/07/1998	8	1162	lightning		
	11/07/1998	33	63	unknown		
	11/10/1998	1012	288	wind		
	11/10/1998	1012	1101	unknown		
	11/15/1998	47	142	unknown		
	11/30/1998	72	61	limb broken - primary		

Work Description

Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.

Estimated cost of work: $45,000

WORST 1% OF NORTHEAST OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
W2012					03/22/1999	06/24/1995
	01/05/1998	4	101	unknown		
	01/17/1998	21	63	unknown		
	01/25/1998	46	46	wildlife		
	03/09/1998	3	213	ice		
	03/19/1998	1978	116	limb broken - primary		
	03/19/1998	10	41	wildlife		
	03/30/1998	596	682	accident by others		
	04/15/1998	8	72	unknown		
	05/02/1998	1978	178	wildlife		
	05/26/1998	1978	20	other		
	05/28/1998	1978	371	tree contact - primary		
	05/28/1998	461	652	limb broken - primary		
	06/18/1998	48	275	tree contact - primary		
	06/26/1998	585	606	limb broken - primary		
	06/26/1998	19	204	tree contact - primary		
	06/30/1998	1	42	wildlife		
	07/19/1998	161	593	wind		
	07/19/1998	10	1402	wind		
	07/19/1998	67	864	limb broken - primary		
	07/21/1998	92	13	foreign object		
	07/29/1998	3	119	unknown		
	08/03/1998	92	248	unknown		
	08/05/1998	25	88	lightning		
	08/25/1998	106	690	limb broken - primary		
	09/25/1998	6	44	accident by others		
	10/07/1998	1978	47	unknown		
	10/26/1998	6	128	unknown		
	11/10/1998	1427	54	wind		
	11/12/1998	12	236	accident by others		
	11/18/1998	43	62	unknown		
	12/10/1998	21	38	intentional - protection of system integrity		

Work Description

Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.

Estimated cost of work: $25,000

WORST 1% OF NORTHEAST OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
C1313Y					03/04/1999	05/15/1999
	02/01/1998	2	459	unknown		
	03/29/1998	744	5	wind		
	05/29/1998	744	691	lightning		
	05/29/1998	351	515	limb broken - primary		
	07/19/1998	14	108	tree contact - primary		
	08/23/1998	744	36	unknown		
	08/31/1998	744	213	underground equipment failure		
	10/10/1998	9	334	accident by others		
	10/19/1998	52	146	underground equipment failure		
	11/09/1998	744	55	tree contact - primary		
	11/10/1998	761	349	unknown		
	11/11/1998	134	527	unknown		
	11/11/1998	99	1733	wind		
	11/11/1998	7	1432	wind		
	12/29/1998	12	608	other		

Work Description

Installation of additional lightning arresters. Installation of additional wildlife protection. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.

Estimated cost of work: $25,000

E6820					03/01/1999	03/16/1991
	03/26/1998	1010	107	wind		
	05/15/1998	1010	382	limb broken - primary		
	05/29/1998	10	1895	tree contact - primary		
	05/29/1998	13	1180	wind		
	06/04/1998	1	109	unknown		
	06/04/1998	692	59	tree contact - primary		
	06/12/1998	1010	173	tree contact - primary		
	06/25/1998	33	685	tree contact - primary		
	06/27/1998	6	163	lightning		
	07/03/1998	41	137	unknown		
	07/19/1998	17	258	lightning		
	07/21/1998	9	811	lightning		
	07/24/1998	16	191	tree contact - primary		
	08/08/1998	1	67	broken fuse link		
	08/10/1998	16	386	limb broken - primary		
	08/24/1998	21	203	wind		
	09/07/1998	1010	291	limb broken - primary		
	09/22/1998	36	158	underground equipment failure		
	11/10/1998	1010	252	wind		
	11/11/1998	9	1172	wind		
	11/12/1998	1010	10	wind		
	11/23/1998	41	88	underground equipment failure		

Work Description

Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Removal of overhead wire slack.

Estimated cost of work: $15,000

WORST 1% OF NORTHEAST OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
E0725					02/16/1999	03/23/1996
	01/12/1998	24	249	ice		
	01/26/1998	5	510	accident by others		
	01/29/1998	24	133	accident by others		
	03/09/1998	304	685	wind		
	04/07/1998	8	39	lightning		
	06/26/1998	20	1199	lightning		
	07/16/1998	348	158	tree contact - primary		
	07/20/1998	348	7	unknown		
	07/20/1998	348	3	unknown		
	09/05/1998	15	76	underground equipment failure		
	11/10/1998	27	381	wind		
	11/10/1998	348	229	tree contact - primary		
	11/10/1998	348	925	wind		
	11/11/1998	14	580	wind		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.					
	Estimated cost of work:	$25,000				
D46					02/03/1999	03/02/1991
	03/09/1998	399	756	flooding/rain		
	05/28/1998	7	689	wind		
	05/28/1998	13	666	wind		
	07/03/1998	401	33	tree contact - primary		
	08/24/1998	401	309	lightning		
	08/25/1998	401	398	limb broken - primary		
	08/28/1998	46	278	tree contact - primary		
	10/03/1998	401	293	tree contact - primary		
	11/10/1998	401	476	wind		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.					
	Estimated cost of work:	$12,000				

WORST 1% OF NORTHEAST OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
W577Y					03/01/1999	10/11/1997
	02/15/1998	390	181	underground equipment failure		
	02/15/1998	6	396	overhead equipment malfunction		
	03/18/1998	1462	35	underground equipment failure		
	04/06/1998	473	128	dig-in by others		
	05/31/1998	196	171	underground equipment failure		
	06/04/1998	21	153	unknown		
	06/09/1998	1462	281	underground equipment failure		
	06/11/1998	20	287	underground equipment malfunction		
	06/27/1998	902	149	other		
	07/07/1998	80	309	underground equipment failure		
	08/10/1998	80	93	underground equipment failure		
	09/07/1998	814	312	lightning		
	10/03/1998	41	107	unknown		
	10/04/1998	37	112	other		
	10/13/1998	36	79	underground equipment failure		
	10/20/1998	1462	63	dig-in by others		
	11/10/1998	1462	72	unknown		

Work Description

Installation of additional grounding. Corrective maintenance per circuit inspection. Replacement of underground cable.

Estimated cost of work: $40,000

W314					02/01/1999	01/01/1993
	01/05/1998	1175	176	unknown		
	01/15/1998	1175	39	unknown		
	02/01/1998	4	50	wildlife		
	03/09/1998	1175	801	ice		
	03/10/1998	3	304	wind		
	03/26/1998	1	147	limb broken - primary		
	04/23/1998	1175	124	wildlife		
	06/06/1998	42	503	tree contact - primary		
	08/01/1998	1175	161	unknown		
	08/24/1998	77	1991	wind		
	08/24/1998	42	1354	lightning		
	08/26/1998	402	422	lightning		
	08/31/1998	217	67	tree contact - primary		
	09/01/1998	1	375	dig-in by others		
	09/07/1998	1	417	lightning		
	09/07/1998	76	933	lightning		
	10/05/1998	2	118	lightning		
	10/08/1998	1175	44	unknown		
	11/10/1998	33	2435	limb broken - primary		
	11/11/1998	5	289	wind		

Work Description

Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.

Estimated cost of work: $85,000

WORST 1% OF NORTHEAST OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
W6613					09/01/1998	05/02/1998
	05/08/1998	44	248	underground equipment failure		
	05/14/1998	30	274	underground equipment failure		
	06/02/1998	14	121	underground equipment failure		
	06/09/1998	457	141	underground equipment failure		
	06/17/1998	457	98	dig-in by others		
	06/26/1998	30	833	underground equipment failure		
	07/05/1998	23	75	underground equipment failure		
	07/23/1998	23	88	underground equipment failure		
	08/05/1998	30	1316	lightning		
	08/05/1998	44	490	underground equipment failure		
	08/19/1998	14	335	unknown		
	09/02/1998	19	469	underground equipment failure		
	09/16/1998	457	179	underground equipment failure		
	09/18/1998	457	60	underground equipment failure		
	12/26/1998	457	63	accident by others		

Work Description
Replacement of underground cable.
Estimated cost of work: $65,000

A668					05/14/1999	
	04/08/1998	485	74	underground equipment failure		
	04/16/1998	485	154	underground equipment failure		
	06/16/1998	12	227	underground equipment failure		
	06/22/1998	13	885	underground equipment failure		
	06/22/1998	485	38	unknown		
	07/11/1998	12	68	underground equipment failure		
	07/20/1998	430	113	dig-in by others		
	08/28/1998	430	42	testing error		
	12/06/1998	430	8	accident by ComEd		

Work Description
Installation of additional lightning arresters. Corrective maintenance per circuit inspection. No tree trimming required because circuit is underground circuit.
Estimated cost of work: $4,500

WORST 1% OF NORTHEAST OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
E5213X					03/17/1999	03/27/1993
	01/23/1998	41	460	overhead equipment contamination		
	03/05/1998	1709	87	wildlife		
	03/24/1998	6	418	other		
	05/30/1998	14	353	wind		
	06/02/1998	198	85	tree contact - primary		
	06/06/1998	61	95	limb broken - primary		
	06/19/1998	185	326	limb broken - primary		
	06/21/1998	10	300	wildlife		
	07/21/1998	8	324	wind		
	08/05/1998	68	306	tree contact - primary		
	08/24/1998	88	766	lightning		
	08/28/1998	1709	100	underground equipment failure		
	08/28/1998	9	474	other		
	09/07/1998	1709	320	lightning		
	09/14/1998	1709	208	lightning		
	10/07/1998	1709	53	other		
	10/14/1998	13	90	wildlife		
	11/10/1998	25	432	unknown		
	12/30/1998	57	353	unknown		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection.					
	Estimated cost of work: $13,000					
D16					02/03/1999	05/15/1993
	03/09/1998	711	695	ice		
	03/14/1998	678	160	tree contact - primary		
	06/09/1998	711	437	tree contact - primary		
	06/16/1998	310	109	other		
	08/24/1998	711	545	wind		
	08/25/1998	711	359	limb broken - primary		
	08/25/1998	26	781	lightning		
	09/11/1998	13	33	limb broken - primary		
	10/18/1998	3	516	tree contact - primary		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.					
	Estimated cost of work: $29,000					

WORST 1% OF NORTHEAST OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
E6026					05/15/1999	09/30/1993
	05/13/1998	1	293	lightning		
	05/28/1998	43	686	underground equipment failure		
	05/28/1998	360	136	underground equipment failure		
	05/29/1998	9	1361	limb broken - primary		
	05/29/1998	4	1069	tree contact - primary		
	06/09/1998	1	162	limb broken - primary		
	06/11/1998	360	96	limb broken - primary		
	06/18/1998	360	39	lightning		
	06/20/1998	9	500	tree contact - primary		
	06/23/1998	53	202	underground equipment failure		
	06/26/1998	4	658	lightning		
	07/04/1998	8	44	unknown		
	07/06/1998	360	182	underground equipment failure		
	08/01/1998	5	106	tree contact - primary		
	08/02/1998	5	154	tree contact - primary		
	08/16/1998	2	433	underground equipment failure		
	08/22/1998	4	623	underground equipment failure		
	09/20/1998	1	964	wind		
	11/04/1998	1	420	underground equipment failure		
	11/10/1998	360	156	wind		
	12/10/1998	1	615	underground equipment failure		
	12/29/1998	1	166	tree contact - primary		

Work Description
Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.
Estimated cost of work: $50,000

W5202					05/14/1999	10/05/1996
	02/03/1998	5	75	other		
	02/27/1998	126	85	limb broken - primary		
	03/09/1998	544	373	ice		
	03/13/1998	613	126	accident by others		
	03/26/1998	613	58	wind		
	03/27/1998	7	563	other		
	04/16/1998	17	159	other		
	07/04/1998	46	292	unknown		
	07/09/1998	12	55	wildlife		
	07/19/1998	8	872	limb broken - primary		
	08/01/1998	1	227	underground equipment failure		
	08/06/1998	1	213	lightning		
	08/24/1998	85	1425	tree contact - primary		
	09/14/1998	613	77	limb broken - primary		
	12/24/1998	613	37	accident by others		

Work Description
Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.
Estimated cost of work: $50,000

WORST 1% OF NORTHEAST OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
W689					03/01/1999	06/06/1998
	03/09/1998	1449	650	ice		
	03/10/1998	1449	76	limb broken - primary		
	03/18/1998	1449	61	tree contact - primary		
	04/14/1998	14	41	wildlife		
	04/15/1998	3	84	other		
	04/20/1998	1449	181	other		
	06/06/1998	2	322	dig-in by others		
	06/09/1998	5	256	tree contact - primary		
	06/10/1998	1	70	overhead equipment malfunction		
	06/23/1998	719	46	unknown		
	06/27/1998	54	294	limb broken - primary		
	06/28/1998	16	810	intentional - protection of system integrity		
	06/29/1998	5	101	wildlife		
	07/24/1998	9	32	wildlife		
	07/27/1998	256	19	limb broken - primary		
	08/05/1998	11	516	lightning		
	08/07/1998	1	169	lightning		
	08/16/1998	11	84	wildlife		
	08/28/1998	955	24	intentional - emergency repairs		
	09/19/1998	3	33	unknown		
	09/28/1998	5	54	wildlife		
	11/03/1998	16	79	wildlife		
	11/10/1998	723	1058	wind		
	11/11/1998	55	319	wind		
	11/21/1998	5	39	wildlife		

Work Description

Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.

Estimated cost of work: $20,000

WORST 1% OF SOUTHERN OPERATING AREA CIRCUITS AS MEASURED BY THE CAIDI INDEX

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
G306					02/22/1999	04/12/1997
	03/09/1998	59	3775	limb broken - primary		
	09/07/1998	1	4237	underground equipment failure		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection.					
	Estimated cost of work:	$20,000				
G252					05/14/1999	11/18/1995
	03/09/1998	30	3695	wind		
	05/19/1998	6	54	underground equipment failure		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.					
	Estimated cost of work:	$20,000				
F225					02/08/1999	05/02/1999
	03/09/1998	84	3732	overhead equipment malfunction		
	08/24/1998	8	1470	lightning		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses.					
	Estimated cost of work:	$20,000				
G214					03/01/1999	09/20/1997
	08/24/1998	6	3186	limb broken - primary		
	Work Description					
	Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection.					
	Estimated cost of work:	$10,000				
F463					05/14/1999	02/01/1997
	03/09/1998	1316	3110	unknown		
	04/27/1998	2	69	wildlife		
	07/06/1998	26	62	tree contact - primary		
	09/01/1998	3	226	underground equipment failure		
	09/26/1998	9	163	wind		
	11/12/1998	1	90	wind		
	12/18/1998	6	309	intentional - emergency repairs		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection.					
	Estimated cost of work:	$15,000				

WORST 1% OF SOUTHERN OPERATING AREA CIRCUITS AS MEASURED BY THE CAIDI INDEX (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
F227					05/14/1999	09/17/1994
	03/09/1998	31	4514	wind		
	08/24/1998	11	1229	limb broken - primary		
	08/28/1998	11	286	wind		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.					
	Estimated cost of work:	$20,000				
F917					02/08/1999	02/28/1999
	03/09/1998	11	2927	ice		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses.					
	Estimated cost of work:	$20,000				
G5873					04/13/1999	05/17/1997
	03/09/1998	41	3458	wind		
	03/09/1998	10	3415	wind		
	07/04/1998	11	108	wildlife		
	07/15/1998	2	107	unknown		
	07/20/1998	1	2358	underground equipment failure		
	07/21/1998	2	298	other		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Removal of overhead wire slack.					
	Estimated cost of work:	$20,000				

WORST 1% OF SOUTHERN OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
F4681					05/14/1999	09/20/1997
	03/09/1998	695	2903	ice		
	03/30/1998	1817	112	unknown		
	04/25/1998	47	235	other		
	05/28/1998	1817	22	unknown		
	06/06/1998	66	148	underground equipment failure		
	07/09/1998	36	139	underground equipment failure		
	07/27/1998	66	154	underground equipment failure		
	08/03/1998	6	217	underground equipment failure		
	08/04/1998	1817	230	lightning		
	08/04/1998	465	58	unknown		
	08/12/1998	46	100	unknown		
	08/19/1998	47	814	unknown		
	08/27/1998	465	189	unknown		
	09/02/1998	92	182	unknown		
	09/06/1998	221	110	wildlife		
	09/20/1998	1817	309	lightning		
	09/22/1998	16	187	underground equipment failure		
	09/23/1998	74	111	underground equipment failure		
	09/26/1998	209	279	wind		
	09/26/1998	12	275	unknown		
	12/29/1998	1817	96	wind		

Work Description
Installation of additional lightning arresters. Trimming of trees. Corrective maintenance per circuit inspection. Replacement of underground cable.
Estimated cost of work: $115,000

WORST 1% OF SOUTHERN OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
G612					02/20/1999	04/18/1998
	03/09/1998	1849	721	wind		
	03/10/1998	6	2451	wind		
	03/10/1998	107	1855	wind		
	05/26/1998	89	56	accident by others		
	06/18/1998	10	802	tree contact - primary		
	08/12/1998	4	156	unknown		
	08/17/1998	1	69	unknown		
	08/24/1998	18	3127	unknown		
	08/25/1998	92	2393	wind		
	08/25/1998	5	1557	unknown		
	08/27/1998	1	450	underground equipment failure		
	08/28/1998	89	25	intentional - protection of system integrity		
	08/28/1998	3	449	unknown		
	08/28/1998	2	462	unknown		
	08/29/1998	1849	8	underground equipment failure		
	08/29/1998	11	694	unknown		
	09/07/1998	16	1574	wind		
	10/01/1998	15	148	tree contact - primary		
	10/01/1998	10	146	limb broken - primary		
	10/24/1998	10	166	other		
	11/01/1998	10	173	intentional - emergency repairs		
	11/03/1998	37	83	wildlife		
	11/10/1998	1849	75	wind		
	11/10/1998	1849	237	wind		
	11/10/1998	1849	397	unknown		
	11/10/1998	38	1142	wind		
	11/22/1998	1849	55	underground equipment failure		

Work Description
Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Removal of overhead wire slack.
Estimated cost of work: $24,000

G6172					02/20/1999	09/10/1994
	01/11/1998	2	321	tree contact - primary		
	03/09/1998	210	1428	ice		
	03/23/1998	2	326	unknown		
	06/10/1998	210	42	unknown		
	07/17/1998	210	78	underground equipment failure		
	07/30/1998	210	13	underground equipment failure		
	08/24/1998	210	64	lightning		
	08/26/1998	210	99	underground equipment failure		
	09/14/1998	1	165	unknown		
	11/24/1998	9	469	accident by others		

Work Description
Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.
Estimated cost of work: $35,000

WORST 1% OF SOUTHERN OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
G4373					03/31/1999	02/09/1991
	02/10/1998	113	66	unknown		
	03/08/1998	1777	145	limb broken - primary		
	03/09/1998	1777	2403	wind		
	03/18/1998	1	1127	unknown		
	03/26/1998	113	81	tree contact - primary		
	05/07/1998	1777	133	underground equipment failure		
	06/18/1998	51	488	limb broken - primary		
	06/26/1998	1777	161	lightning		
	06/26/1998	80	508	extreme heat		
	06/26/1998	16	673	unknown		
	07/16/1998	4	96	unknown		
	08/14/1998	15	63	wildlife		
	08/24/1998	482	600	wind		
	08/25/1998	1	874	lightning		
	08/25/1998	13	1565	wind		
	08/25/1998	177	1388	unknown		
	09/07/1998	11	756	lightning		
	09/09/1998	1	194	lightning		
	11/06/1998	1	50	accident by others		
	11/10/1998	1777	170	wind		
	11/10/1998	178	1031	wind		
	11/11/1998	162	1198	wind		

Work Description
Installation of additional lightning arresters. Trimming of trees. Corrective maintenance per circuit inspection. Removal of overhead wire slack.
Estimated cost of work: $25,000

W3613					02/15/1999	12/01/1990
	02/27/1998	1290	14	dig-in by others		
	04/16/1998	1290	43	underground equipment failure		
	04/16/1998	17	75	limb broken - primary		
	06/13/1998	9	158	unknown		
	06/26/1998	1290	274	other		
	08/24/1998	7	958	lightning		
	09/07/1998	1290	352	unknown		
	09/07/1998	17	532	tree contact - primary		
	09/15/1998	11	96	unknown		
	10/10/1998	1290	52	unknown		
	10/10/1998	59	161	unknown		
	10/25/1998	51	98	underground equipment failure		
	11/24/1998	48	96	switching error		

Work Description
Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses.
Estimated cost of work: $20,000

WORST 1% OF SOUTHERN OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
G146					02/20/1999	10/07/1995
	03/29/1998	222	11	lightning		
	03/30/1998	222	141	other		
	05/31/1998	222	96	limb broken - primary		
	07/02/1998	222	80	unknown		
	07/05/1998	6	940	underground equipment failure		
	07/08/1998	1	155	unknown		
	07/16/1998	222	69	unknown		
	08/24/1998	222	64	lightning		
	08/26/1998	1	311	wind		
	09/07/1998	1	1186	lightning		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Removal of overhead wire slack. Estimated cost of work: $35,000					
D3413					05/14/1999	03/06/1995
	02/05/1998	1	152	unknown		
	03/18/1998	1290	202	unknown		
	05/05/1998	15	49	wildlife		
	06/20/1998	7	76	wildlife		
	06/27/1998	1815	111	tree contact - primary		
	06/28/1998	4	108	wildlife		
	07/16/1998	10	90	wildlife		
	07/21/1998	14	67	lightning		
	08/03/1998	6	114	wildlife		
	08/04/1998	8	375	lightning		
	08/04/1998	1815	35	unknown		
	08/05/1998	54	243	unknown		
	09/04/1998	13	60	wildlife		
	09/25/1998	16	51	lightning		
	09/25/1998	4	336	lightning		
	09/26/1998	49	42	tree contact - primary		
	09/28/1998	13	56	wildlife		
	10/18/1998	1815	384	limb broken - primary		
	10/23/1998	6	54	wildlife		
	11/11/1998	42	79	limb broken - primary		
	12/15/1998	1815	15	accident by others		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Removal of overhead wire slack. Estimated cost of work: $35,000					
J1678					05/14/1999	05/30/1994
	03/07/1998	39	154	limb broken - primary		
	03/26/1998	172	105	wind		
	04/09/1998	172	101	unknown		
	04/13/1998	172	76	unknown		
	06/18/1998	63	941	lightning		
	08/06/1998	172	30	wildlife		
	11/15/1998	15	206	unknown		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Removal of overhead wire slack. Estimated cost of work: $35,000					

WORST 1% OF NORTHWEST OPERATING AREA CIRCUITS AS MEASURED BY THE CAIDI INDEX

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
R6374NO2					03/09/1999	11/01/1994
	06/18/1998	14	1939	tree contact - primary		
	06/18/1998	73	1831	tree contact - primary		
	Work Description					
	Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.					
	Estimated cost of work:	$25,000				
R6514					03/09/1999	04/01/1995
	11/10/1998	6	1538	limb broken - primary		
	Work Description					
	Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Removal of overhead wire slack.					
	Estimated cost of work:	$2,000				
B455					03/04/1999	04/30/1995
	08/25/1998	13	1463	wind		
	Work Description					
	Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses. Removal of overhead wire slack.					
	Estimated cost of work:	$5,000				
R6505AN4					03/01/1999	11/01/1994
	05/28/1998	92	1226	tree contact - primary		
	06/18/1998	18	1350	lightning		
	11/12/1998	11	321	tree contact - primary		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses.					
	Estimated cost of work:	$45,000				
B236					03/01/1999	05/04/1999
	08/24/1998	32	1053	tree contact - primary		
	Work Description					
	Installation of additional lightning arresters. Installation of additional wildlife protection. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses.					
	Estimated cost of work:	$50,000				

WORST 1% OF NORTHWEST OPERATING AREA CIRCUITS AS MEASURED BY THE CAIDI INDEX (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
B501					05/15/1999	09/18/1993
	01/28/1998	2	42	unknown		
	03/04/1998	16	22	accident by others		
	04/04/1998	1	154	other		
	04/23/1998	1	62	wildlife		
	05/12/1998	1	1	tree contact - primary		
	05/28/1998	93	670	unknown		
	06/01/1998	1	106	overhead equipment malfunction		
	06/17/1998	1	224	overhead equipment malfunction		
	06/23/1998	4	170	unknown		
	06/28/1998	4	685	wind		
	06/28/1998	522	921	tree contact - primary		
	06/29/1998	4	153	limb broken - primary		
	06/29/1998	2	125	tree contact - primary		
	07/02/1998	7	208	other		
	07/12/1998	1	152	wildlife		
	07/21/1998	1	39	lightning		
	08/07/1998	7	36	wildlife		
	08/24/1998	4	211	unknown		
	08/24/1998	30	328	unknown		
	08/24/1998	13	255	wind		
	08/24/1998	10	1657	limb broken - primary		
	08/24/1998	13	1507	lightning		
	08/24/1998	75	1641	lightning		
	08/24/1998	1	1504	lightning		
	08/24/1998	2	1633	unknown		
	08/24/1998	1	1558	wind		
	08/24/1998	1	1530	lightning		
	08/24/1998	1	1499	wind		
	08/25/1998	71	1459	wind		
	08/25/1998	11	1443	wind		
	08/25/1998	1	1441	unknown		
	08/25/1998	4	1423	wind		
	08/25/1998	1	1420	limb broken - primary		
	08/25/1998	12	1418	wind		
	08/25/1998	13	2082	tree contact - primary		
	08/25/1998	5	680	tree contact - primary		
	10/12/1998	7	136	accident by others		
	11/04/1998	1	314	foreign object		
	11/10/1998	1	364	limb broken - primary		
	12/21/1998	1	141	overhead equipment malfunction		

Work Description
Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses.
Estimated cost of work: $100,000

B217					05/15/1999	01/01/1998
	06/11/1998	10	99	tree contact - primary		
	06/28/1998	1	279	limb broken - primary		
	06/28/1998	26	416	limb broken - primary		
	08/23/1998	108	360	unknown		
	08/24/1998	101	1794	limb broken - primary		

Work Description
Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses.
Estimated cost of work: $30,000

WORST 1% OF NORTHWEST OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
W6311					03/01/1999	06/24/1995
	03/09/1998	1905	122	wind		
	03/26/1998	1905	54	foreign object		
	04/25/1998	64	62	dig-in by others		
	05/19/1998	11	35	wildlife		
	05/28/1998	119	767	wind		
	05/29/1998	104	568	wind		
	06/01/1998	24	152	underground equipment failure		
	06/09/1998	3	98	wildlife		
	06/26/1998	10	396	lightning		
	06/28/1998	8	211	lightning		
	08/21/1998	99	109	dig-in by others		
	08/23/1998	142	35	unknown		
	08/24/1998	1905	119	limb broken - primary		
	09/03/1998	32	100	underground equipment failure		
	09/28/1998	93	67	accident by others		
	10/01/1998	146	77	dig-in by others		
	10/02/1998	14	375	underground equipment malfunction		
	11/10/1998	1905	21	wind		
	11/10/1998	218	395	lightning		
	11/10/1998	27	291	wind		
	11/10/1998	190	162	unknown		
	11/20/1998	3	81	overhead equipment malfunction		
	12/18/1998	237	223	unknown		
	12/24/1998	49	66	underground equipment failure		

Work Description
Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Removal of overhead wire slack.
Estimated cost of work: $27,000

W3114					03/03/1999	06/15/1996
	04/22/1998	1	487	underground equipment failure		
	05/03/1998	959	31	unknown		
	05/29/1998	13	1088	lightning		
	07/04/1998	5	133	wildlife		
	08/03/1998	6	423	other		
	08/12/1998	959	527	accident by others		
	08/17/1998	959	408	intentional - emergency repairs		
	09/07/1998	1	377	lightning		
	09/15/1998	12	319	tree contact - primary		
	09/17/1998	90	218	unknown		
	09/24/1998	1	902	underground equipment failure		
	10/20/1998	959	71	accident by others		
	11/01/1998	1	58	underground equipment failure		
	11/04/1998	9	60	wildlife		
	11/10/1998	948	162	wind		
	11/10/1998	6	1262	tree contact - primary		
	11/10/1998	224	894	wind		

Work Description
Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Removal of overhead wire slack.
Estimated cost of work: $38,000

WORST 1% OF NORTHWEST OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
W631					05/14/1999	06/29/1995
	04/15/1998	1	39	wildlife		
	05/18/1998	28	132	underground equipment failure		
	05/30/1998	1453	26	limb broken - primary		
	06/26/1998	1499	115	lightning		
	06/26/1998	1151	181	unknown		
	07/04/1998	116	222	limb broken - primary		
	08/03/1998	22	98	underground equipment failure		
	08/04/1998	1	104	lightning		
	09/17/1998	95	130	dig-in by others		
	09/22/1998	1	70	dig-in by others		
	09/25/1998	46	70	dig-in by others		
	09/27/1998	17	126	underground equipment failure		
	11/10/1998	1453	341	wind		
	11/10/1998	18	1127	flooding/rain		

Work Description
Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection.
Estimated cost of work: $15,000

W7218					05/10/1999	04/01/1995
	01/02/1998	16	146	dig-in by others		
	02/08/1998	2209	95	accident by others		
	02/08/1998	1	112	accident by others		
	03/04/1998	3	120	other		
	03/10/1998	3	228	overhead equipment malfunction		
	04/10/1998	15	306	other		
	05/12/1998	3	61	unknown		
	06/03/1998	1	344	wind		
	06/19/1998	11	495	underground equipment failure		
	06/24/1998	49	28	intentional - emergency repairs		
	06/24/1998	36	1	intentional - emergency repairs		
	06/26/1998	14	643	lightning		
	07/28/1998	52	95	dig-in by others		
	08/14/1998	2	161	underground equipment failure		
	11/10/1998	2209	155	unknown		
	11/10/1998	1731	282	flooding/rain		
	11/10/1998	105	1219	unknown		
	11/10/1998	2209	255	unknown		
	11/11/1998	9	715	underground equipment failure		
	11/11/1998	1	203	wind		
	11/21/1998	92	106	dig-in by others		

Work Description
Installation of additional lightning arresters. Corrective maintenance per circuit inspection. Inspection of lightning arresters and circuit grounding.
Estimated cost of work: $10,000

WORST 1% OF NORTHWEST OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
R6402					05/12/1999	11/30/1996
	01/25/1998	40	147	underground equipment failure		
	05/28/1998	101	351	limb broken - primary		
	06/17/1998	61	85	wildlife		
	06/18/1998	1478	144	limb broken - primary		
	06/18/1998	1478	1296	unknown		
	06/19/1998	131	356	unknown		
	06/20/1998	101	71	limb broken - primary		
	06/26/1998	8	117	overhead equipment malfunction		
	07/19/1998	441	229	unknown		
	07/20/1998	41	269	wind		
	07/26/1998	49	159	underground equipment failure		
	08/20/1998	1478	45	lightning		
	08/20/1998	29	94	lightning		
	08/21/1998	9	230	lightning		
	09/24/1998	15	456	accident by others		
	10/24/1998	9	387	overhead equipment malfunction		
	10/30/1998	45	131	underground equipment failure		
	11/20/1998	9	130	wildlife		

Work Description

Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses.
Estimated cost of work: $90,000

WORST 1% OF NORTHWEST OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
B865					05/15/1999	2/01/1999
	01/01/1998	9	100	overhead equipment malfunction		
	04/13/1998	18	191	tree contact - primary		
	05/12/1998	2	183	lightning		
	05/16/1998	5	126	tree contact - primary		
	05/19/1998	1	248	wind		
	05/28/1998	1	1188	tree contact - primary		
	06/01/1998	5	181	lightning		
	06/03/1998	1	89	wildlife		
	06/10/1998	456	97	wildlife		
	06/11/1998	2	393	limb broken - primary		
	07/19/1998	456	458	limb broken - primary		
	07/19/1998	8	243	limb broken - primary		
	07/19/1998	7	239	tree contact - primary		
	07/19/1998	1	265	unknown		
	07/19/1998	3	255	unknown		
	07/19/1998	1	65	lightning		
	08/02/1998	1	140	wildlife		
	08/04/1998	1	240	lightning		
	08/04/1998	1	81	lightning		
	08/04/1998	4	26	lightning		
	08/24/1998	11	1461	limb broken - primary		
	08/25/1998	4	257	lightning		
	08/25/1998	9	179	lightning		
	09/26/1998	7	110	lightning		
	11/10/1998	456	432	unknown		
	11/10/1998	33	93	unknown		
	11/10/1998	12	111	limb broken - primary		
	11/10/1998	10	94	tree contact - primary		
	11/10/1998	18	212	limb broken - primary		
	11/10/1998	34	539	wind		
	11/11/1998	1	160	lightning		
	11/11/1998	6	87	unknown		
	11/16/1998	1	31	wind		
	12/03/1998	4	99	accident by others		

Work Description

Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing reclosers and fuses.

Estimated cost of work: $45,000

WORST 1% OF NORTHWEST OPERATING AREA CIRCUITS AS MEASURED BY THE CAIFI/SAIFI INDICES (Continued)

Circuit	Interruption Date	Circuit Customers Affected	Duration in Minutes	Cause	Date Of Last Circuit Inspection	Date Of Last Circuit Tree Trimming
R8009					05/15/1999	04/06/1995
	03/01/1998	180	508	underground equipment failure		
	05/12/1998	1343	148	lightning		
	05/12/1998	15	39	lightning		
	05/13/1998	5	184	lightning		
	05/24/1998	82	239	limb broken - primary		
	05/28/1998	98	105	limb broken - primary		
	06/18/1998	1343	246	tree contact - primary		
	06/18/1998	13	1144	unknown		
	07/10/1998	19	39	accident by others		
	07/19/1998	1343	157	other		
	07/20/1998	4	389	lightning		
	07/21/1998	11	144	limb broken - primary		
	08/09/1998	44	45	intentional - protection of system integrity		
	08/25/1998	19	191	lightning		
	09/07/1998	18	476	tree contact - primary		
	09/17/1998	18	72	accident by others		
	10/24/1998	8	29	other		
	11/18/1998	11	86	wildlife		
	12/29/1998	14	127	tree contact - primary		

Work Description

Installation of additional lightning arresters. Installation of additional wildlife protection. Trimming of trees. Corrective maintenance per circuit inspection. Installation of sectionalizing fuses.
Estimated cost of work: $130,000

Section 411.120 (b)(3)(K): *"Commencing June 10, 2001, tables or graphical representations, covering for the last three years all of the jurisdictional entity's customers, and showing, in ascending order, the total number of customers that experienced a set number of interruptions during the year (i.e., the number of customers, who experienced zero interruptions, the number of customers who experienced one interruption, etc.)."*

K. Number of Customers Experiencing A Set Number of Interruptions

This section requires us, commencing June 10, 2001, to provide tables or graphical representations, covering for the last three years for all of our customers, and showing, in ascending order, the total number of customers who experienced a set number of interruptions during the year. In light of the commencement date of this requirement, we will provide such tables or graphical representations in our annual reliability reports filed after June 9, 2001.

Section 411.120 (b)(3)(L): *"Commencing June 10, 2001, for those customers who experienced interruptions in excess of the service reliability targets, a list of every customer, identified by a unique number assigned by the jurisdictional entity and not the customer's name or account number, the number of interruptions and interruption duration experienced in each of the three preceding years, and the number of consecutive years in which the customer has experienced interruptions in excess of the service reliability targets."*

L. List of Customers Experiencing Interruptions in Excess of Reliability Targets

This section requires us, commencing June 10, 2001, for our customers who experienced interruptions in excess of the service reliability targets, to provide a list of every customer, identified by a unique number that we have assigned and not the customer's name or account number, the number of interruptions and interruption duration experienced in each of the three preceding years, and the number of consecutive years in which the customer has experienced interruptions in excess of the service reliability targets. In light of the commencement date of this requirement, we will provide such a list in our annual reliability reports filed after June 9, 2001.

Section 411.120 (b)(3)(M): *"The name, address and telephone number of a jurisdictional entity representative who can be contacted for additional information regarding the annual report."*

M. ComEd Representative to Contact for Additional Information

Our Regulatory and Government Affairs Department is the primary departmental contact for additional information regarding this report. The individual representative from that department who can be contacted for such information is:

Janet B. Szczypinski
Commonwealth Edison Company
Regulatory and Government Affairs
One First National Plaza
10 South Dearborn
38th Floor
Chicago, Illinois 60603
(312) 394-3711

PART II: SECTION 411.210

In this Part, we respond to the requirements set forth in Section 411.210(b) and (c) of the Commission's Reliability Rules.

Section 411.210 (b)(1): *"Each record that Section 411.200 requires the utility to maintain."* ***[Section 411.200(a):*** *"Electric utilities with 1,000,000 or more customers must maintain service records detailing information on each interruption that affects 10 or more customers or power fluctuations that affect 30,000 or more customers. The service record for each interruption shall be maintained for at least five years and shall include the information listed below. 1) Starting date of the interruption or power fluctuation. 2) Starting time of the interruption or power fluctuation. 3) Interruption or power fluctuation duration. 4) Number of customers affected by the interruption or power fluctuation. 5) Description of the cause of the interruption or power fluctuation. 6) Geographic area affected by the interruption or power fluctuation. 7) Specific equipment involved in the interruption or power fluctuation. 8) Description of measures taken to restore service or eliminate power fluctuation. 9) Description of measures taken to remedy the cause of the interruption or power fluctuation. 10) Description of measures taken to prevent a future interruption or power fluctuation. 11) Amount of remuneration, if any, paid to affected customers. 12) Statement of whether the fixed charge was waived for affected customers."****]***

b.1. Interruptions and Power Fluctuations

In the Appendix to this report, we present service records that we are required to maintain under Section 411.200 of the Commission's Reliability Rules. These records contain the following information about each interruption of our transmission and distribution system during 1998 that affected ten or more customers:

1) Starting date of the interruption.
2) Starting time of the interruption.
3) Interruption duration.
4) Number of customers affected by the interruption.
5) Description of the cause of the interruption.
6) Geographic area affected by the interruption.
7) Specific equipment involved in the interruption.
8) Description of measures taken to restore service.
9) Description of measures taken to remedy the cause of the interruption.
10) Description of measures taken to prevent a future interruption.
11) Amount of remuneration, if any, paid to affected customers.
12) Statement of whether the fixed charge was waived for affected customers.

It should be noted that the duration of each interruption shown in the Appendix is the period of time starting when ComEd was notified about or became aware of the interruption and ending when all customers who had been interrupted were restored. Because customers generally are restored individually or in groups, not all customers who were interrupted necessarily experienced the full duration of the interruption. Thus, for example, if an interruption affected ten customers and five were restored after thirty minutes and the remaining five were restored after sixty minutes, the duration would be listed as sixty minutes for all ten customers.

Section 411.200 also requires us to maintain service records containing information about power fluctuations that affect 30,000 or more customers similar to the information listed above that we need to maintain about interruptions that affect 10 or more customers. Because we did not experience any such power fluctuations on our system during 1998, there are no records regarding such power fluctuations presented in this report.

Section 411.210 (b)(2): *"The projected load and peak demand for each of the utility's operating areas for the following three years."*

b.2. Projected Load and Peak Demand

In planning to serve our customers, we forecast annual peak load for future years. The starting point for the forecast is the most recent actual peak demand. Peak demand represents the highest annual one-hour requirement for power delivered to customers through the transmission and distribution system for heating, lighting, cooling and other purposes. Actual peak demand is adjusted for normal (long-term average) weather conditions as part of projecting future load. Regional economic growth and population trends are major factors influencing load projections.

Projected loads are compared with system capabilities to determine if, when and where there is a need for additional or upgraded capability. Actual 1998 peak demand and projected peak loads for 1999-2001 are shown in Table 20.

Table 20: Peak Demand and Projected Load (in Megawatts)*

Operating Area	Peak Demand	Projected Load		
	1998	1999	2000	2001
Chicago	4,681	4,934	4,957	5,015
Northeast	6,450	6,835	6,942	7,093
Southern	4,319	4,487	4,537	4,604
Northwest	3,562	3,843	3,938	4,038
System Total**	19,012	20,100	20,375	20,750

* A megawatt is one million watts. In our service territory, a megawatt is equal to the power it takes to provide the electrical needs for about 300 average residential customers during the peak summer months.

**Operating area numbers may not add up exactly to system total numbers due to rounding.

Section 411.210 (b)(3): *"The peak loading (as a percentage of rated normal and emergency capacity) on each transmission and distribution substation transformer operating during its peak loading period at or above 90 percent of normal rated capacity, except where such data would reveal information about loads of specific customers."*

b.3. Peak Loading On Transformers

Transformers are used to lower the voltage of electricity from transmission lines to distribution lines. The "loading" on a transformer is the measure of the power being delivered through the equipment. Loading varies with the amount of power flowing at any given time. During the period of highest customer usage of electricity, typically in the summer, the loading on a transformer will reach a peak level. This level is called the "peak loading."

Table 21 below provides a summary, by operating area, of distribution transformers that had a peak loading that equaled or exceeded 90% of their rated normal capacity. Normal capacity is the suggested limit at or below which a transformer is designed to operate continuously throughout its lifetime. A transformer also has an emergency rating capacity, which is the suggested limit at or below which the transformer is designed to operate for a given number of hours during its lifetime. For each distribution transformer listed in Table 21, we provide the following information:

- the transformer's normal rating capacity in MVA (an MVA is roughly equivalent to a megawatt, which is one million watts);
- the transformer's emergency rating capacity in MVA;
- the transformer's peak loading in 1998 in MVA;
- the percent of the transformer's normal rating capacity that the peak loading represents; and
- the percent of the transformer's emergency rating capacity that the peak loading represents.

In reviewing Table 21, it is important to note that while loading on our transformers generally does not exceed 100% of normal rating capacity under normal conditions, exceeding that level does not mean that the transformer will fail or needs to be replaced. At the same time, if a transformer does peak above 100% of its normal rating capacity, we analyze the reason and where necessary take action, such as transferring load to a different transformer.

Accordingly, in Table 22, we describe our corrective actions with respect to distribution transformers having a peak loading of 100% or more of normal rating capacity.

Table 21: Peak Loading On Each Distribution Transformer At or Above 90%

Chicago

Transformer ID	Normal Rating in MVA	Emergency Rating in MVA	1998 Peak Loading in MVA	% of Normal Rating	% of Emergency Rating
TSS54-73*	59.3	70.6	60.7	102%	86%
DCX381-2*	8.4	11.1	8.5	101%	77%
TSS38-43*	9	11	9.1	101%	83%
TSS41-61	25	36.3	24.5	98%	67%
TSS41-62	25	36.3	24.4	98%	67%
TSS68-4	40	52	38.5	96%	74%
DCX381-1	8.4	11.1	7.9	94%	71%
DCX307-2	4.6	5.2	4.3	93%	83%
TSS114-77	49.4	59.8	46	93%	77%
TSS38-41	9	11	8.4	93%	76%
TSS35-2	29.7	35.9	27.4	92%	76%
TSS35-4	29.7	35.9	27	91%	75%
TSS38-74	55.4	66.8	50.4	91%	75%
DCX315-2	3	3.6	2.7	90%	75%
SS834-1	6.2	7.1	5.6	90%	79%
TSS38-44	9	11	8.1	90%	74%

* See Table 22 for corrective action.

Northeast

Transformer ID	Normal Rating in MVA	Emergency Rating in MVA	1998 Peak Loading in MVA	% of Normal Rating	% of Emergency Rating
DCE11-3*	7.4	8.5	8.6	116%	102%
DCA31-2*	7.4	8.5	8	108%	94%
DCE72-1*	3.6	4.1	3.8	106%	93%
DCC3-3*	7.4	8.5	7.7	104%	91%
DCC60-1*	7.4	8.5	7.7	104%	91%
DCC92-1*	5.8	6.7	6	104%	90%
DCA61-2*	7.4	8.5	7.6	103%	90%
TSS42-77*	48	58	49.1	102%	85%
DCW346-1*	7.4	8.5	7.5	101%	88%
DCC3-2*	3.9	4.4	3.9	100%	88%
DCW330-1*	3.6	4.1	3.6	100%	88%
TDC207-72*	48.4	59.6	48.2	100%	81%
DCD67-1	7.4	8.5	7.3	99%	86%
DCW334-2	7.4	8.5	7.3	99%	86%
DCC75-1	7.4	8.5	7.2	97%	85%
TDC268-74	49.4	60.6	48	97%	79%
TSS172-74	45.2	55.6	44	97%	79%
DCC32-1	7.4	8.5	7.1	96%	84%
TSS85-3	48	58	46.5	96%	80%
DCC19-1	5.9	6.8	5.6	95%	83%
DCD69-1	5.6	6.8	5.3	95%	78%
TSS102-1	42.6	51.6	40.5	95%	78%
TSS154-73	42.6	51.6	40.4	95%	78%
DCE39-1	3.9	4.4	3.7	94%	83%
SS280-3	3.7	4.2	3.5	94%	82%
TDC207-74	49.4	60	46.4	94%	77%
TDC233-71	25.6	31	24.1	94%	78%
TDC505-42	7.5	9.2	6.9	93%	75%
TSS102-73	42.6	51.6	39.5	93%	77%
TSS85-1	48	58	44.9	93%	77%
DCC62-1	7.4	8.5	6.8	92%	80%
DCC65-2	7.4	8.5	6.8	92%	80%
DCC90-1	5.6	6.4	5.1	92%	80%
TDC212-71	24	29	22	92%	76%
TDC268-71	48	58.1	44.2	92%	76%
TSS145-72	48	58.1	44	92%	76%
DCA15-2	7.4	8.5	6.7	91%	79%
DCC20-2	7.4	8.5	6.7	91%	79%
TDC250-72	14.8	17	13.4	91%	79%

*** See Table 22 for corrective action.**

Southern

Transformer ID	Normal Rating in MVA	Emergency Rating in MVA	1998 Peak Loading in MVA	% of Normal Rating	% of Emergency Rating
DCJ49-1*	7.4	8.5	8.8	119%	104%
DCJ92-1*	7.4	8.5	8.3	112%	98%
DCJ19-1*	7.4	8.5	8.1	109%	95%
DCJ18-1*	7.4	8.5	7.6	103%	90%
DCJ60-1*	7.4	8.5	7.6	102%	89%
DCJ28-1*	7.4	8.5	7.5	101%	89%
DCK20-1*	7.4	8.5	7.5	101%	89%
TSS149-51*	7.4	8.5	7.5	101%	89%
DCF16-1*	7.4	8.5	7.4	100%	87%
DCG64-1*	3.9	4.4	3.9	100%	89%
DCJ27-1	7.4	8.5	7.3	99%	86%
DCJ33-1	7.4	8.5	7.2	97%	85%
SS558-52	7.4	8.5	7.2	97%	85%
DCF17-1	7.4	8.5	7.1	96%	83%
SS471-1	7.4	8.5	7.1	96%	84%
TSS60-73	42.6	51.7	40.8	96%	79%
DCJ24-1	7.4	8.5	7	95%	83%
DCJ87-1	7.4	8.5	7	95%	82%
DCS44-2	7.4	8.5	7	95%	82%
SS460-51	12.8	15.5	12.2	95%	79%
TSS76-72	25.6	31	24.3	95%	78%
TSS60-71	42.6	51.7	40.1	94%	78%
DCD229-2	7.1	8.5	6.6	93%	78%
DCJ21-1	7.4	8.5	6.9	93%	81%
DCJ92-2	7.4	8.5	6.9	93%	81%
DCD114-2	7.4	8.5	6.8	92%	80%
DCG81-1	3.9	4.4	3.6	92%	82%
DCJ69-2	7.4	8.5	6.8	92%	80%
SS422-2	7.4	8.5	6.8	92%	80%
DCS66-3	7.4	8.5	6.7	91%	79%
SS471-2	7.4	8.5	6.7	91%	79%
TDC436-73	40	48	36.5	91%	76%
TSS103-73	40	48	36	90%	75%

*** See Table 22 for corrective action.**

Northwest

Transformer ID	Normal Rating in MVA	Emergency Rating in MVA	1998 Peak Loading in MVA	% of Normal Rating	% of Emergency Rating
DCE79-1*	7.4	8.4	8.4	113%	99%
TSS75-73*	27.4	43.5	30	110%	69%
TSS75-71*	27.4	43.5	29.8	109%	68%
DCW29-2*	7.4	8.4	8	108%	95%
DCE16-2*	7.4	8.4	7.6	103%	90%
DCW114-1*	3.7	4.2	3.8	103%	90%
TSS131-77*	51.2	62	52.2	102%	84%
TSS56-76*	51.2	62	52.2	102%	84%
TDC581-73*	46.4	57.2	46.9	101%	82%
DCE19-1	7.4	8.4	7.3	98%	86%
DCW118-1	6.2	7.4	6.1	98%	82%
DCE17-1	7.4	8.4	7.1	96%	84%
DCE26-3	11.1	12.7	10.7	96%	84%
SS513-56	7.4	8.4	7.1	96%	85%
DCH53-52	7.4	8.4	7.1	95%	84%
DCW18-1	7.4	8.4	7	95%	83%
TSS131-79	51.2	62	48.8	95%	79%
DCH55-1	2.5	3	2.3	94%	78%
TSS111-76	76.8	93	72.3	94%	78%
TSS56-71	25.1	29.7	23.6	94%	79%
DCE71-3	7.4	8.4	6.9	93%	82%
SS513-54	7.4	8.4	6.9	93%	82%
DCH67-51	7.4	8.5	6.8	92%	81%
DCW115-1	5.6	6.4	5.1	92%	80%
DCW50-1	7.4	8.4	6.8	92%	81%
TSS131-78	51.2	62	47	92%	76%
TSS138-1	7.4	8.4	6.8	92%	81%
TSS75-76	51.2	62	47.2	92%	76%
SS316-51	7.4	8.5	6.7	90%	79%
TSS160-71	24	29	21.7	90%	75%

*See Table 22 for corrective action.

Table 22: Distribution Transformer Loading Corrective Actions

Operating Area	Transformer ID	Corrective Action
Chicago	TSS54-73	Bus transfer; transfer 7.0 MVA off TR73
	DCX381-2	4:12 conversion; transfer 2 MVA off TR2
	TSS38-43	Circuit relief; transfer 0.6 MVA off TR43
Northeast	DCE11-3	Circuit relief; transfer 3.0 MVA off TR3
	DCA31-2	Circuit relief; transfer 1.7 MVA off TR2
	DCE72-1	Install new Cary TDC; transfer 1.5 MVA off TR1
	DCC3-3	Circuit relief; transfer 1.0 MVA off TR3
	DCC60-1	Remove DCC60; transfer 7.7 MVA off TR1
	DCC92-1	Circuit relief; transfer 1.4 MVA off TR1
	DCA61-2	Circuit relief; transfer 0.5 MVA off TR2
	TSS42-77	Install new Circuit E4811; transfer 7.3 MVA off TR77
	DCW346-1	Circuit relief; transfer 0.8 MVA off TR1
	DCC3-2	Transformer change-out; increase rating
	DCW330-1	Circuit relief; transfer 0.2 MVA off TR1
	TDC207-72	Install new Circuit W0103; transfer 2.7 MVA off TR72
Southern	DCJ49-1	Circuit relief; transfer 1.7 MVA off TR1
	DCJ92-1	Circuit relief; transfer 4.7 MVA off TR1
	DCJ19-1	Circuit relief; transfer 1.2 MVA off TR1
	DCJ18-1	Transformer change-out; increase rating
	DCJ60-1	Circuit relief; transfer 1.1 MVA off TR1
	DCJ28-1	Emergency upgrade on 8/10/98; increase rating
	DCK20-1	Circuit relief; transfer 0.6 MVA off TR1
	TSS149-51	Circuit relief; transfer 0.8 MVA off TR51
	DCF16-1	Circuit relief; transfer 2.1 MVA off TR1
	DCG64-1	Circuit relief; transfer 0.4 MVA off TR1
Northwest	DCE79-1	Install TR2 at DCE79; transfer 4.7 MVA off TR1
	TSS75-73	Install TR74 at TSS75; transfer 7.0 MVA off TR73
	TSS75-71	Install TR74 at TSS75; transfer 7.0 MVA off TR71
	DCW29-2	Circuit relief; transfer 2.2 MVA off TR2
	DCE16-2	4:12 conversion; transfer 2 MVA off TR1
	DCW114-1	Transformer change-out; increase rating
	TSS131-77	Install Line L57736 at TDC577; transfer 8.0 MVA off TR77
	TSS56-76	Install TR77 at TSS56; transfer 18.0 MVA off TR76
	TDC581-73	Install fans at TR73; increase rating

With respect to our transmission system, only five of our transformers had peak loading at or above 90% of their normal ratings in 1998. Two of these transformers are at our Electric Junction substation, where an additional transformer will be installed by the summer of 1999. This transformer addition will relieve projected peak loading under contingency (adverse) interruption conditions. Two of the other transformers were loaded well below 100% of their normal ratings, and thus no action was necessary. The fifth transformer had a peak value just slightly over 100% of normal rating. This peak loading occurred, however, during a contingency situation, for which the emergency rating was the appropriate rating to apply. Because the loading was only 87% of the transformer's emergency rating, no action was warranted.

Table 23 below presents information about these five transmission transformers, similar to the information presented previously for distribution transformers.

Table 23: Peak Loading on Each Transmission Transformer At or Above 90%

ComEd Operating Area	Station	Transformer ID	Normal Rating in MVA	Emergency Rating in MVA	1998 Peak Loading in MVA	% of Normal Rating	% of Emergency Rating
Southern	Dresden	12-83	360	411	360.1	100.0	87.6
Northwest	Electric Junction	111-83	400	465	382.5	95.6	82.2
Northwest	Electric Junction	111-84	400	465	369.2	92.3	79.4
Northwest	Nelson	155-84	398	465	367.2	92.2	78.9
Chicago	Crawford	13-82	420	480	383.0	91.1	79.7

Section 411.210 (c): *"File, with the Commission's Chief Clerk, a report on or before June 1, 1999 that lists the discrete areas for which it collected reliability data and kept reliability records and that explains its reliability data collection and record-keeping procedures for calendar year 1997."*

c. Reliability Data Collection and Record-Keeping Procedures for 1997

In 1997, we collected reliability data and kept reliability records for our system as a whole, as well as for our four operating areas – Chicago, Northeast, Southern, and Northwest (which in 1997 were called, respectively, Chicago, Northern, Southern, and Rock River).

We collected these data and kept these records through our Interruption Reporting System. This system recorded interruptions lasting more than one minute, and stored data electronically. These data were used in reports that tracked reliability. Those reports included:

- the Daily System Interruption Report, which tracked daily interruptions by operating area;
- the Division Frequency & Duration Report, which tracked interruption frequency and duration by operating area per quarter;
- the Annual Interruption Summary Report, which summarized interruption data for the calendar year by operating area; and
- the Year-to-Date Interruption Report, which tracked monthly year-to-date interruption data by operating area.

The Interruption Reporting System used in 1997 provided useful data, but the system did have certain limitations. For instance, it did not provide the data needed to calculate customer-based reliability indices. Nor was it Year 2000 compliant.

We have a new Interruption Reporting System as of 1998. It enables us to continue to report and track reliability data by discrete operating area, permits us to keep records by discrete customer, and is Year 2000 compliant.